

ARCHAEOLOGIA
OR
MISCELLANEOUS TRACTS
RELATING TO
ANTIQUITY



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PUBLISHED BY THE
SOCIETY OF ANTIQUARIES OF LONDON
VOLUME LXXX



PRINTED AT OXFORD
BY JOHN JOHNSON FOR
THE SOCIETY OF ANTIQUARIES
AND SOLD AT THE SOCIETY'S APARTMENTS IN BURLINGTON HOUSE, LONDON
MCMXXX

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SECOND SERIES: VOLUME XXX



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TABLE OF CONTENTS

	PAGE
I.— <i>A Bronze Cauldron from the River Cherwell, Oxfordshire, with notes on cauldrons and other bronze vessels of allied types. By E. THURLOW LEEDS, Esq., M.A., Vice-President</i>	1-36
II.— <i>Romano-Celtic Art in Northumbria. By R. G. COLLINGWOOD, Esq., M.A., F.S.A.</i>	37-58
III.— <i>Excavations at Kingsdown Camp, Mells, Somerset, 1927-9. By H. ST. GEORGE GRAY, Esq., F.S.A.</i>	59-98
IV.— <i>The Eucharistic Reed or Calamus. By TANCRED BORENIUS, Esq., Ph.D., D.Lit.</i>	99-116
V.— <i>The Sanctuary of the Madonna delle Grazie, with notes on the evolution of Italian armour during the fifteenth century. By J. G. MANN, Esq., M.A., F.S.A.</i>	117-142
VI.— <i>The Monastery of Cluny, 910-1155. By Miss ROSE GRAHAM, M.A., D.Litt., F.S.A., and A. W. CLAPHAM, Esq., Secretary</i>	143-178
VII.— <i>The Chambered Cairn of Bryn Celli Ddu. By W. J. HEMP, Esq., F.S.A.</i> .	179-214
VIII.— <i>The Castles of the Bosphorus. By SIDNEY TOY, Esq., F.S.A., F.R.I.B.A.</i> .	215-228
IX.— <i>Further Excavations at Caerwent, Monmouthshire, 1923-5. By V. E. NASH-WILLIAMS, Esq., M.A., F.S.A.</i>	229-288

LIST OF ILLUSTRATIONS

PLATE		PAGE
	A BRONZE CAULDRON FROM THE RIVER CHERWELL, OXFORDSHIRE :	
I.	Bronze cauldron from the River Cherwell, Shipton-on-Cherwell, Oxfordshire facing	2
II.	1. Detail of staple of cauldron from River Cherwell. 2. Bronze cauldron from an unknown locality facing	3
	Fig. 1. Details of staples : (a) Portglenone, (b) Dowris	6
III.	1. Bronze cauldron from River Cherwell. 2. Cauldron from Portglenone. 3. Detail of staple of cauldron from Hattenknowe 4. Detail of cauldron from Hattenknowe facing	6
IV.	1. Lateral view of staple and ring DU 4. 2. Interior view of staple and ring from Dulduff. 3. Lateral view of staple and ring from Dulduff. 4. Dublin, W 13. 5. Milkernagh Bog, Granard facing	7
	Fig. 2 a, b, c. Section and details of staple of the Llyn Fawr cauldron	8
	Fig. 3. Detail of inner struts in cauldron from Raffery Bog	10
V.	1. Detail of staple and ring of cauldron from the West of Scotland. 2-3. Details of staples and stays of bronze cauldron from the West of Scotland facing	10
VI.	1. Battersea. 2. Detail of cauldron, W 13. 3. Detail of cauldron from Ballyshannon facing	11
	Fig. 4. Details of staples from Ipswich	13
VII.	1-2. Near Donaghadee facing	14
VIII.	1-4. Details of bronze buckets showing reinforcing plates on the base, (1) W 15 ; (2) and (4) Dowris ; (3) Derrymacash facing	15
	Fig. 5. Types of bronze implements and ornaments contemporary with the cauldrons and buckets	17
	Fig. 6 a, b, c. Types of bronze spears contemporary with the cauldrons and buckets	19
	Fig. 7. Reinforcing plates from a bronze situla, Talamone, Tuscany	21
	Fig. 8. Bronze bucket from Cardross and base of the same	22
IX.	1. Bronze situla from the Tomba del Duce, Vetulonia. 2. Base of bronze situla from the Tomba del Duce, Vetulonia facing	22
X.	1. 'Dinos' from Rhodes. 2. Detail of handle of a 'dinos' from Rhodes facing	23
	Fig. 9. Detail of figured situla from Certosa	25
	Fig. 10. Bronze cauldrons from Gordion, Phrygia	26
	Fig. 11. Coins from Croton and Zakynthos with representations of cauldrons	27

PLATE	PAGE
ROMANO-CELTIC ART IN NORTHUMBRIA :	
XI. The Aesica Brooch facing	37
Fig. 1. Thistle-brooches	38
Fig. 2, <i>a-d</i> . Bow- and fan-tail brooches	39
Fig. 3, <i>a-f</i> . Trumpet-brooches	44
Fig. 4, <i>a-e</i> . Trumpet-brooches	45
Fig. 5, <i>a-h</i> . Trumpet-brooches. Fig. 6, <i>a-c</i> . Southern English imitations of R (ii)	49
Fig. 7. Rough sketches of trumpet-brooches found in Germany	50
Fig. 8. Brooch from Heddernheim. Fig. 9. Trumpet-brooch from Aesica	51
Fig. 10. Above: flawed casting from Brough-under-Stainmore. Below : trumpet-brooch from Aesica	52
Fig. 11, <i>a-d</i> . S-shaped brooches	53
Fig. 12, <i>a-g</i> . Head-stud brooches	55
Fig. 13. Rough sketches of head-stud brooches found in Germany	56
EXCAVATIONS AT KINGSDOWN CAMP, MELLS, SOMERSET :	
XII. 1. Inner Ditch (Cutting II). 2. Cutting XII facing	66
XIII. 1. Inner Ditch on the NW. (Cutting II Extension). 2. Inner Ditch on the E. side (Cutting XV) facing	67
Fig. 1. Sectional Diagrams, Kingsdown Camp	67
XIV. 1. Inner Ditch (Cutting XIV). 2. Outer Ditch (Cutting III) facing	70
Fig. 2. Pottery	77
Fig. 3. Two pottery vessels found in the Inner Ditch	79
Fig. 4. P 36. Pedestal base, found in the Inner Ditch	80
Fig. 5. Bronze brooches	83
Fig. 6. Bronze objects and ancient British coin	84
Fig. 7. Iron objects	85
Fig. 8. Iron Currency-bars	87
Fig. 9. Objects of Bone and Antler	89
XV. Plan of Kingsdown Camp facing	94
XVI. Sectional diagrams, Kingsdown Camp facing	96
THE EUCHARISTIC REED OR CALAMUS :	
Fig. 1. Drawing illustrating the normal medieval use of the Calamus.	
Fig. 2. Use of the Calamus by the Pope	107
Fig. 3. Eucharistic Reeds at Erfurt	112
Fig. 4. Various types of Eucharistic Reeds	114
XVII. 1. Calamus at Wilten. 2. Pair of Eucharistic Reeds and Chalice at Wilten. 3. Pair of Eucharistic Reeds in the Hermitage. 4. Calamus at Göttweig. 5. Calamus (Dr. Borenius). 6. Calamus, St. Peter's, Salzburg facing	114

LIST OF ILLUSTRATIONS

xi

PLATE	PAGE
XVIII. 1. Calamus of Pope Clement VIII. 2. Calamus in the Municipal Museum of Lüneburg. 3. Eucharistic Reeds at present used by the Pope facing	115
THE SANCTUARY OF THE MADONNA DELLE GRAZIE:	
Fig. 1. Sketch-plan of the interior of the Church	121
XIX. Interior of the Church of Santa Maria delle Grazie facing	122
XX. 1. The second figure. Wearing armour of the second half of the XVth century. 2. Drawing by Perugino in the Royal collection at Windsor facing	123
Figs. 2-3. Details of the second figure	123
Fig. 4. Brass of Richard Fox. Fig. 5. Detail of brass of Richard Dyxton	124
Fig. 6. Detail of the fifth figure. Figs. 7-8. Details of the ninth figure	125
XXI. 1. The fifth figure. 2. The ninth figure. 3. The thirty-fifth figure. 4. The fourteenth figure facing	126
XXII. 1. The seventh figure. 2. The sixteenth figure. 3. The twenty-seventh figure. 4. The twenty-first figure. 5. The thirty-third figure. 6. The twenty-ninth figure facing	127
Fig. 9. Detail of the thirty-fifth figure. Fig. 10. Detail of the seventh figure. Fig. 11. Detail of the fourteenth figure	127
Fig. 12. Detail of the sixteenth figure. Fig. 13. Detail of the twenty-first figure. Fig. 14. Detail of the thirty-ninth figure	129
Fig. 15. Duellist, from the MS. of Maestro Fiore dei Liberi, 1410	131
XXIII. 1. St. George, by Gentile da Fabriano. 2. Tomb of Giovanni Cose of Naples. 3. Milanese armour, c. 1420-40, in the Castle of Churburg. 4. Drawing by Jacopo Bellini in the Louvre	
XXIV-V. Drawings by a Paduan artist of the second quarter of the XVth century in the Camera delle Stampe at Rome	between 132 and 133
XXVI. 1. Tamerlane. 2. Milanese Gothic armour, c. 1430-50. 3. Armour of the Count Palatine Frederick the Victorious. 4. Milanese Gothic armour, c. 1450. 5. Milanese Gothic armour, c. 1450. 6. Milanese armour of Ferdinand, King of Aragon	
Fig. 16. Detail of the effigy of J. St. Loe, †1440	134
XXVII. 1. Tomb of Antonio Rido. 2. One of the reliefs on the Triumphal Arch of Alfonso V of Aragon	
XXVIII. 1. Totila mounting his horse: in the cloisters of the monastery of Monte Oliveto near Siena. 2. Pair of arms, Milanese, middle of the XVth century. 3. Armour from the church of San Niccolò at Tolentino	between 136 and 137

PLATE		PAGE
XXIX.	1. Donor and St. George. Wing of a triptych by Joos van Cleef the Elder. 2. Incomplete Milanese armour. 3. Milanese armour of the Doge of Genoa, Giovanni Fregoso. 4. Back-plate with Milanese marks. 5. Detail of the Massacre of the Innocents by Matteo di Giovanni	between 136 and 137
XXX.	1. Wooden figures of St. George and St. Florian executed by the Tyrolese artist Hans Mültcher between 1456-8, in the church of the Holy Ghost at Vipiteno (Sterzing). 2. Intarsia panel in the study of Federigo da Martinfelro, Duke of Urbino, in the Castle of Urbino	
XXXI.	1. Detail of St. William in the picture of the Virgin and Child by Ercole Grandi in the National Gallery. 2. Detail of St. George from the picture of the B.V.M. and Saints at Bologna by Lorenzo Costa. 3. Detail of St. Quentin in the picture of the Virgin and Child with Saints by Bianchi Ferrari in the Louvre. 4. Tomb of the French captain, Ansedun Giraud, in the church of the SS. Apostoli, Rome	facing 138
XXXII.	1. The Emperor Charles V. One of the figures on the second row in the church of Santa Maria delle Grazie. 2. The holy picture of the Virgin and Child in the chapel of the B.V.M. in the church of Santa Maria delle Grazie. 3. Pope Pius II. One of the figures on the second row in the church of Santa Maria delle Grazie	facing 139
THE MONASTERY OF CLUNY, 910-1155:		
XXXIII.	1. A phylactery from the abbey of Oignies, Musées Royaux d'Art, Brussels. 2. The Corona in the Cathedral Church of Hildesheim	facing 150
XXXIV.	1. North view of the Church of Cluny, September 22nd, 1617. 2. The consecration of the high altar of Cluny by Pope Urban II	facing 151
	Fig. 1. The drawing by Lenoir	163
XXXV.	1. The Candlestick in the Cathedral Church of Brunswick. 2. The grant of the foundation charter of St. Martin des Champs by Henry I, King of France	
XXXVI.	1. Wall-painting in the apse, Berzé-les-Moines. Christ in Glory. 2. Wall-painting in the apse, Berzé-les-Moines. SS. Dorotheus, Sennen, etc.	
XXXVII.	Bible of Souvigny, Musée de Moulins. 1. The ark carried round the walls of Jericho. 2. (a) David feeding his flock in the wilderness; (b) David's victory over Goliath. 3. King Solomon. 4. The Ascension	between 164 and 165
XXXVIII.	1. A Mosaic of the Transfiguration. Musée du Louvre. 2. The Transfiguration. MS. Fonds de Cluny 129, Bibliothèque Nationale	
	Fig. 2. Cluny. Plan of the second church and monastic buildings	167

LIST OF ILLUSTRATIONS

xiii

PLATE		PAGE
	Fig. 3. Tournus Abbey, Burgundy	170
XXXIX.	1. Tournus Abbey, from the SW. 2. Cluny Abbey, S. Transept, looking SE. facing	170
	Fig. 4. Hirsau Abbey, Wurtemberg. Fig. 5. Anzay-le-Duc Priory, Burgundy	171
	Fig. 6. Charlieu Priory, Burgundy. Chapter-house Entrance	173
XL.	Plan of the abbey buildings at Cluny facing	174
THE CHAMBERED CAIRN OF BRYN CELLI DDU :		
	Fig. 1. General plan	185
XLI.	1. Chamber from NE. before treatment. 2. Replaced cairn from W. and stones marking circle 4 facing	186
XLII.	1. Pillar from west. 2. Hammer-dressed edge of stone 7. 3. Pillar from south facing	187
XLIII.	1. Base of pillar in socket. 2. Clay-set wall as first uncovered, and dressed face of stone 13 facing	190
XLIV.	1. Clay-set wall as first uncovered, and dressed edge of stone 7. 2. Stones 2 and 3, with pattern stone and central stone when first exposed. facing	191
XLV.	1. Spiral on stone 4. 2. Dressed surface of cover E. 3. Stone 7 with hollow to receive cover C. 4. Covers A and B replaced and fitted together facing	194
XLVI.	1. Antechamber north of portal; stones 17 and 19, and walling between 15 and 19. 2. Portal and outer passage (walling of circle 3 covered by soil) facing	195
XLVII.	1. Stone 25, dry walling on either side of it, and filling of ditch behind. 2. Entrance from north; greater part of 'cork' removed exposing mound in causeway and flooring of hearth against stone 28 facing	198
XLVIII.	1. Forecourt, post-holes, pit containing ox, and upright stones bounding north side. 2. Central pit with hollow in filling, and central stone removed to one side facing	199
XLIX.	1. Pattern stone before removal; stone 3 on right and small packing blocks between. 2. Pattern stone, underside. 3. Diagrammatic drawing of pattern stone showing continuity of design facing	202
L.	1. Site of Pattern stone. 2. Circle 2 opposite stone <i>d</i> with walling between and upon uprights facing	203
LI.	1. Circles 2 and 3 south of entrance. 2. Stone <i>n</i> from west	between 204 and 205
LII.	1. The three broken recumbent stones by <i>b</i> . 2. Area south of portal. Inner slope of ditch	
LIII.	1. Outer side of stones 5 and 3. 2. Stone <i>f</i> , radial view	
LIV.	1. View along axis of forecourt; stones filling post-holes in foreground. 2. Portal, circle 2, and forecourt from south	

LIST OF ILLUSTRATIONS

PLATE		PAGE
LV.	Sections, 1-6 facing	206
	Fig. 2. Stone bead and flints	208
	Fig. 3. Diagrammatic plan showing the position of the lesser cairn relative to the main monument	212
LVI.	Trench plan facing	212
THE CASTLES OF THE BOSPORUS :		
LVII.	Roumeli Hissar. Plan of Castle facing	215
LVIII.	1. Roumeli Hissar. From the Bosphorus. 2. Roumeli Hissar. The south tower and south wall from within the Castle facing	216
LIX.	1. Roumeli Hissar. The west wall and north tower from within the Castle. 2. Roumeli Hissar. The north tower and adjoining walls from within the Castle facing	217
	Fig. 1. Map of the Bosphorus	217
	Fig. 2. Roumeli Hissar : East Gate from without	219
LX.	Roumeli Hissar	between 222 and 223
LXI.	Roumeli Hissar. The west wall from within the Castle and the east wall from the Bosphorus	
LXII.	Roumeli Hissar. The Gateways	
LXIII.	1. Roumeli Hissar. The north tower. 2. Roumeli Hissar. The north tower and north wall from the Bosphorus	between 224 and 225
LXIV.	1. Roumeli Hissar. The east tower from within the Castle . 2. Roumeli Hissar. The east tower and the barbican	
LXV-LXVI.	Roumeli Hissar. The north tower	
LXVII.	Roumeli Hissar. The east tower	between 224 and 225
LXVIII.	Roumeli Hissar. The south tower	
LXIX.	Castle of Roumeli Hissar. The south tower and adjoining walls from within the Castle	
LXX.	1. Roumeli Hissar. From the hill west of the Castle. Looking across the Bosphorus to Anadolu Hissar on the east shore. 2. Anadolu Hissar from the Bosphorus	between 224 and 225
LXXI.	Anadolu Hissar. Plan of Castle	
LXXII.	Anadolu Hissar. The Keep	
LXXIII.	1. Anadolu Hissar. From the east. 2. Hieron Castle. Ana- doli Kavak. The Gateway from the east	between 224 and 225
LXXIV.	1. Hieron Castle. From the mound in the lower bailey. 2. Hieron Castle. The gateway and flanking towers from within the Castle	
LXXV.	Hieron Castle. Anadolu Kavak. Plan and section through the Castle facing	226
LXXVI.	Hieron Castle. Anadolu Kavak	226

LIST OF ILLUSTRATIONS

XV

PLATE		PAGE
	FURTHER EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE, 1923-5:	
LXXVII.	Caerwent: Roman Buildings north of the Churchyard . . . facing	234
	Fig. 1. Apsidal building. Conjectural restoration	235
LXXVIII.	1. Caerwent, south wall; general view looking west from the South Gate, on the right. 2. Building XXVIII s: the hot-water bath (12) showing the heating flues on the left. 3. East end of the apsidal building covering the NW. corner of the colonnade of building XXVIII s facing	238
LXXIX.	1. Outer wall-face: facing stones above and core below; showing method of construction. 2. Cutting through earthen ramp backing the wall, showing the inner wall-face and the wall-footings (behind pole). 3. No. 3 Break. 4. No. 9 Break facing	239
	Fig. 2. Objects of metal and glass	239
	Fig. 3. Samian pottery	243
	Fig. 4. Coarse pottery	249
LXXX.	Caerwent: South Wall. General Plan facing	254
	Fig. 5. No. 15 Break	256
	Fig. 6. South Gateway. Plan and interior elevation	258
LXXXI.	1. Outer wall-face showing the putlog holes. 2. South Gateway: exterior. 3. No. 1 Bastion: sill of door in E. wall. 4. No. 4 Bastion, from E. facing	258
LXXXII.	1. No. 1 Counterfort, from W. 2. No. 3 Counterfort, from W. and no. 10 Break. 3. No. 5 Counterfort, from W. 4. No. 6 Counterfort, from W. facing	259
	Fig. 7. South Gateway. Interior	259
	Fig. 8. No. 1 Bastion. Section through filling	264
	Fig. 9. Face of main wall inside No. 4 Bastion showing pointing. Fig. 10. No. 4 Bastion. Section through filling	266
	Fig. 11. Caerwent. Section across southern defences	268
LXXXIII.	Caerwent: South Wall. Schematic Restoration to illustrate Method of Construction facing	270
	Fig. 12. Fibula found in the filling in No. 4 Bastion	279
LXXXIV.	1. Samian pottery. 2. Stone inscribed CDRF found in debris against outer wall-face. 3. Stamped tile found in debris in room 7 of building XXVIII s facing	282
	Fig. 13. Coarse pottery	285
	Fig. 14. Coarse pottery	287
LXXXV.	Caerwent (Venta Silurum): General Plan of Roman Town . . . facing	288

I.—*A Bronze Cauldron from the River Cherwell, Oxfordshire, with notes on cauldrons and other bronze vessels of allied types.*

By E. THURLOW LEEDS, Esq., M.A., Vice-President

Read 23rd January 1930

THE bronze cauldron here illustrated (pl. 1) has recently been added to the British prehistoric collections in the Ashmolean Museum. It was acquired from the person into whose hands it passed almost immediately after discovery, but of the conditions of discovery it has been impossible to ascertain more than that it was found by some bathers in the bed of the River Cherwell at Shipton-on-Cherwell. Chance was indeed kind when it allowed a vessel of a highly interesting class to be rescued from the mud in which it had lain in a comparatively shallow stream for over two thousand years, in what must, in view of the extreme fragility in relation to its size, be regarded as a quite remarkable state of preservation.

The cauldron measures 18 in. in height; $63\frac{1}{2}$ in. in circumference; 24 in. at its greatest diameter, and 22 in. across the mouth (external). It was originally built up of three sheets of metal, of under one-sixteenth of an inch in thickness, in two tiers, the lower overlapping the upper. The bowl-shaped base, 8 in. high and $21\frac{1}{2}$ in. in diameter, was beaten up out of one sheet, but, like much of other parts of the cauldron, suffered in time from wear, so that the bottom had to be cut out and replaced by a new shallow piece, $9\frac{3}{4}$ in. in diameter. The strokes of the broad-ended chisel employed to cut away the defective metal can be clearly seen.

The upper tier is built of two bands meeting below the handles. These bands pass from the shoulder into a short, perpendicular neck $1\frac{1}{8}$ in. deep, triply corrugated to give it strength. Above, the metal is bent outwards at an angle of 45° , and then rolled over towards the inside of the mouth so as to form a half tubular rim with a flattened top, 1 in. wide. The inner margin is rolled downwards into a small tube, which seems to lack the rod of metal round which it must originally have been beaten and which in rims of this kind was frequently left inside.

Apart from those already noticed other extensive repairs have been carried out. At the junction of the two tiers are two bands, $25\frac{1}{2}$ in. long by $4\frac{1}{2}$ in. wide and $13\frac{1}{2}$ in. by 4 in. respectively. Between them are two smaller patches, the

A BRONZE CAULDRON FROM

one 3 in. square, now lost; the other $4\frac{1}{2}$ in. long by 3 in. deep, still in position. On one of the long bands a still smaller patch, $2\frac{1}{2}$ by $1\frac{1}{2}$ in., has been used to make good a hole in the original reparation. In making the larger repairs the tinker has first of all cut away the defective metal so as to leave a hole of the same shape as the patch.

The sheets of the cauldron in its original state were riveted together by plain, flat-headed rivets, the head of the rivet on the inside of the cauldron; the rivets used for the patches are smaller and less carefully made. A large flat-headed rivet has also been employed to fill a small hole in the bottom.

The ring-handles are of cast bronze, of plain round section, $5\frac{1}{4}$ in. in diameter and $\frac{1}{2}$ in. thick, and have the root of the casting-jet, of oval outline, and also the ridge at the junction of the valves of the mould, still left on them. They are secured to the cauldron by stout staples, 2 in. wide, which rise up above the rim and encircle it. Their construction is interesting; they are in fact three penannular loops, $2\frac{1}{2}$ in. in diameter and $\frac{1}{2}$ in. thick, separate except where owing to faulty casting the metal has run through the joints of the mould and filled the interstices between the rings (pl. II, fig. 1). Below, the ends of the loops meet in a splayed plate on either side at the groove of the neck. These plates are not riveted to the cauldron, but by a process, which, as will be seen, is common to the majority of vessels of a similar character in Great Britain and Ireland, are cast, loops and all, directly on to the cauldron. On the top of one of the loops a small protuberance indicates the position of the casting-jet; on others traces of the jets remain.

Cauldrons of the Shipton and allied types are of uncommon occurrence, particularly in such good preservation. In England and Scotland they are distinctly rare; in Ireland more numerous examples have come to light, largely, it would seem, from their having been conserved in peat-bogs, sometimes at considerable depths, from five feet at Killinchy, co. Down, to twelve at Farney, co. Monaghan, and at Granard, co. Longford, and fifteen at Donaghadee, co. Down.

It is a well-established fact that cauldrons of this or closely allied form with large ring-handles are confined in Western Europe to Great Britain and Ireland, and so far as I can discover, there seems to be no continental example of a vessel extant which might be regarded as standing immediately 'in loco parentis' to the British cauldron. This, as will be explained later, is the more strange, since these cauldrons are to some extent contemporaneous with situlae or buckets, which, while conforming to the type of the cauldron in having ring-handles, by reason of their shape, leave no doubts of their descent from the familiar situlae of the Italian Iron Age. Since these situlae are associated in Italy and in neighbouring regions of Central Europe with finds belonging to a period equivalent to Hallstatt II and later (c. 800-500 B.C.), it is clear that



Bronze cauldron from the River Cherwell, Shipton-on-Cherwell, Oxfordshire ($\frac{1}{4}$)



Fig. 1. Detail of staple of cauldron from River Cherwell, Shipton-on-Cherwell ($\frac{1}{2}$)



Fig. 2. Unknown locality. Belfast Museum (c. $\frac{1}{4}$)

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the derived examples found in these islands must, as is indeed proved by associated objects, belong to the close of the British Bronze Age or to the beginning of the Iron Age.

From Irish literature we learn that the cauldron was a highly treasured possession, though the written accounts afford no indication whether the cauldron of literature and that of archaeology were identical in form. Outside the group with which this paper is immediately concerned, there is another, later in date and of somewhat different form, which comes nearer in time to that of the literature.¹ But here we are concerned with an earlier group in the form in which it is known to archaeology, and granted that the approximate age of both the cauldrons and buckets which compose this group is known, the question arises whether an examination of the extensive series of such vessels, whole or fragmentary, now preserved in the museums of these islands, will reveal any points of detail which can be judged to indicate evolution and improvements in the methods of manufacture. If the variations are capable of such interpretation, we may from internal evidence arrive at a relative chronology within the series, and perhaps through it at greater precision in the matter of absolute chronology than has been possible hitherto.

The cauldrons present two principal features in which a wide measure of variation is observable, (1) the form of the vessel itself, and (2) the form of the staples by which the ring-handles are secured and the method of attachment of the staples to the vessel. In addition the rings themselves, and in a lesser degree, the rivets fastening together the sheets of metal, from which the cauldrons are invariably built up, will be found to differ in some measure according to the type or sub-type with which they are associated, and thus in turn may help to fix the position of any imperfect vessel within the series. To

¹ e.g. Ballyregan Bog, co. Derry (Belfast Museum, 1911, 144); Bog of Allen, Urlingford, co. Kilkenny (*Journ. R. Soc. Ant., Ireland*, liii, 25, fig. 13, 1); Ballymoney, co. Antrim (*ibid.*, fig. 13, 2), and near Keash, Ballymote, co. Sligo (the last three in the National Museum, Dublin); Whitehills Moss, Lochmaben, Dumfriesshire (*Cat. Nat. Mus. Ant., Scot.*, 1892, DU, 6), and Carlingwark Loch, Kelton, Kirkcudbrightshire (J. Anderson, *Scotland in Pagan Times, Bronze and Stone Ages*, 205, fig. 223), both in the National Museum of Scottish Antiquities, Edinburgh; and finally Wotton, Surrey (British Museum). All the above are of a form well attested in the Iron Age and Roman times (compare J. Schrānil, *Die Vorgeschichte Böhmens und Mährens*, Taf. liv, 12) and are often fitted with iron rim and rings.

Apart from these I have omitted, on account of marked variation in form or details of construction, such examples as the imperfect specimen from London (British Museum, *Guide to the Bronze Age*, 2nd ed., p. 55) and the fine cauldron from the Moss of Kincardine, Stirlingshire (*Proc. Soc. Ant., Scotland*, xix, 313, fig. 2; *Cat. Nat. Mus. Ant., Scot.*, 1892, DU 1, fig.), which never had handles and has its rim reinforced by a secondary roll of sheet-metal with an edge tucked under the roll of the rim proper, and is decorated with large bosses, imitating rivet-heads, the real rivets being much smaller and alternating with the bosses at a higher level; and finally, a cauldron with a very narrow, plain rim from Dirnaveagh, co. Antrim (Belfast Museum, 1925, 279).

this end an examination of kindred features in the buckets may contribute further useful evidence.

Although even in form considerable variation can be detected, for reasons which will appear later, it seems best to divide the cauldrons on the basis of form into two classes, A and B, alone. Class A it may perhaps be admissible to subdivide into two or three sub-types. The arrangement of the cauldrons on grounds of form alone may appear arbitrary, but it serves as a useful starting point, and will be found to go hand in hand with the evidence derived from other features. For that reason in the following account all the features are examined under each individual class, and comparisons are left for final consideration.

CLASS A. Form. In this class the body varies from a spheroidal, as in the Shipton cauldron (pl. III, fig. 1), to an inverted conoid shape. In the rounder type the transition from the vertical neck to the greatest girth of the belly naturally runs in an easy curve as Belfast, 1911, 142 (pl. II, fig. 2); in the conoid form, as in that from Portglenone (pl. III, fig. 2), there is a marked shoulder, almost flat in some more pronounced examples, with the result that the triple corrugations of the neck, which is set further towards the middle of the vessel, are to some extent hidden below the overhang of the rim. Accentuation of the shoulder goes hand in hand with a greater tendency to a conoid form below.

The neck and rim in all the cauldrons of both classes are part and parcel of the two sheets or plates out of which the upper tier of the body is constructed. The neck in Class A is invariably corrugated, but differs greatly in height from $1\frac{1}{8}$ in. (three corrugations) in the Shipton cauldron to $\frac{3}{8}$ in. (two corrugations) in that from Portglenone. The rim is formed by bending the plate above the corrugations outwards at an angle of 45° , and then turning it sharply inwards again so as to make a flattish top about $\frac{3}{4}$ in. wide, sometimes decorated with faint transverse corrugations. On the inner edge the plate has been rolled into a small tube round a thin rod or wire, which is not always left in position. In some cases it was beaten round a wooden rod, as the late Mr. Armstrong remarked in his account of some of the Irish cauldrons, notably in that from Cloonascragh Bog, nr. Tuam, co. Galway.¹ Similar traces of a small wooden rod were observed by Mr. Callander and myself in the rim of the cauldron from Edleston, Peebleshire, preserved in the National Museum of Scottish Antiquities; remains of a larger rod can be clearly detected in the small fragment of cauldron, to which are attached staples, from Ipswich belonging to Class B, in the British Museum.

Staples. In no case does the staple, except that of the Shipton cauldron,

¹ *J.R.S.A., Ireland*, liv, 113.

exhibit unmistakable evidence of an intention to produce or reproduce three separate loops united below on each side by roughly cast plates. Instead we find commonly a half-tube with three stout exterior ribs. In some examples, as Derreen and Ireland, W 12, this tube passes on each side into a very roughly shaped plate like that from Shipton, but in others greater care has been taken in their manufacture, so that the ribbed holder is connected with a long horizontal, half-tubular bar which clips the edges of the brim, and extends below into a vertical oblong tongue, usually narrower than the horizontal bar (pl. III, fig. 3). This vertical tongue reaches to the neck of the cauldron. The appearance of each side of the staple, omitting the ribbed holder, is of a **T** with a very wide vertical stroke. The aspect of the **T** varies considerably; every gradation from the roughly shaped plate to the neatly made **T** with clean cut edges can be found, according to the degree of care exercised in their manufacture. Many of the Irish examples within Class A and that from Edleston conform to this type, which in its entirety represents a triple-ribbed arch on two **T**-shaped supports.

There seems reason to believe that the prototype of the staple had three ribs. In that event any increase in the number of ribs must have arisen from a copyist's fancy, but curiously the increase is always to five ribs, never four. In two examples known to me, on the cauldron from Cloonascurragh Bog, Tuam, and a staple broken from another found at Dulduff, Kilkerran, Ayrshire, the five ribs are all rounded as in the triple-ribbed staples. The Tuam example is important in another connexion, which may be left on one side for the moment. In the Dulduff staple, meanwhile, we are confronted by a novel feature, which to the best of my knowledge is confined to this, to another example, DU 4 from an unknown site, in the National Museum of Scottish Antiquities and to one without provenance in the National Museum, Dublin. In all these the ends of the horizontal bars projecting beyond the ribbed holder are joined by flat transverse bars across the rim. The result is an oblong frame with a ribbed arch concealing the open part of the frame. The second Scottish example has only three large ribs, but at each end of the holder is a narrow additional moulding which looks like a transition stage to the complete five ribs of the Dulduff staple.

This conclusion seems to be borne out by a further type of staple associated with cauldrons belonging to Class A. Here, instead of five rounded ribs, there are only three, the two outer ribs being replaced by sharply angled flanges, and each end of the holder has a clean-cut, perpendicular face (pl. III, fig. 2 and fig. 1). In addition, the space between the two horizontal bars is partially or completely filled, so that the ring-handle ceases to come in direct contact with the rim, but works in a tube.

That this is the order of development of the staple up to this point is clearly proved by the Cloonascurragh Bog cauldron. One of the staples is of the variety last described; the other, as already noted, has five rounded ribs, and exhibits signs of the heavy wear and use to which the extensive patching of the body of the cauldron itself also bears witness. Evidently the pair to the worn staple had broken through, and had had to be replaced by a new one, which,



Fig. 1. Details of staples ($\frac{1}{2}$); (a) Portglenone, Ashmolean Museum (Schedule I, no. 7).
(b) Dowris, British Museum (" " " 30).

as might be expected, conforms to the change in fashion or advance in technical knowledge in the casting of the staples. The latter will more probably be accepted as the true explanation, when it is realized that in every case the staples have been cast on to the vessel itself, after the constituent sheets had been riveted together.

In view of the knowledge of riveting of which we have ample evidence from the earliest days of the Bronze Age, it is strange to find so complicated a method of affixing the staples to the body, and it may well be asked whether the reason does not lie in imitation of some Mediterranean model, the handles of which were brazed on to the rim or side of the vessel. The process of brazing was apparently unknown to prehistoric man in these islands, and it seems fair to surmise that he was, as often happens with imitators, attempting to arrive at a certain result without a full acquaintance with the necessary technique, by which the original result was attained.

In spite of that the results were adequate and indicate a considerable skill in casting, since it must have been exceedingly difficult to cast a mass of molten metal on to a vessel so thin as these cauldrons were without incurring the risk of burning through the sheet metal and thus destroying the whole work. Sometimes this probably did happen. In a staple and ring from Duddingston Loch it is not possible to detect the wall of the vessel between the two plates of the staple when examined in section; only in front where the outer plate is a trifle shorter than the inner can a film of bronze (one can hardly call it more) be seen



Fig. 1. River Cherwell, Shipton-on-Cherwell ($\frac{1}{7}$)



Fig. 4. Detail of cauldron from Hattenknowe, Edleston, Peeblesshire. National Museum of Scottish Antiquities, Edinburgh ($\frac{1}{2}$)



Fig. 2. Portglenone, co. Antrim. Ashmolean Museum (c. $\frac{1}{4}$)



Fig. 3. Detail of staple of cauldron from Hattenknowe, Edleston, Peeblesshire. National Museum of Scottish Antiquities, Edinburgh ($\frac{1}{2}$)



Fig. 1. Lateral view of staple and ring DU 4. National Museum of Scottish Antiquities ($\frac{1}{2}$)



Fig. 2. Interior view of staple and ring from Dulduff, Kilkerran, Ayrshire. National Museum of Scottish Antiquities ($\frac{1}{2}$)



Fig. 3. Lateral view of staple and ring from Dulduff, Kilkerran, Ayrshire. National Museum of Scottish Antiquities ($\frac{1}{2}$)



Fig. 4. Dublin, W 13. National Museum, Dublin (c. $\frac{1}{3}$)

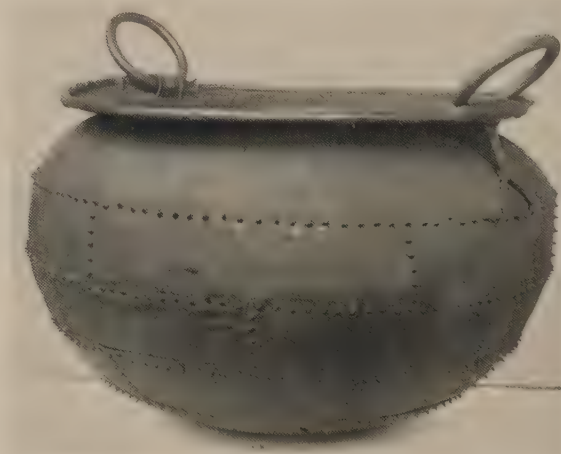


Fig. 5. Milkernagh Bog, Granard, co. Longford. National Museum, Dublin (c. $\frac{1}{3}$)

representing the sheet metal of the body on to which the staple was cast. Here it looks as if the sheet metal was fused by the casting, the work spoilt, and the ring and staple found their way into the hoard as scrap-metal.

On DU 4 (pl. iv, fig. 1) the inner roll and the top of the rim can just be detected in the photograph, and the extreme thinness of the metal can be judged from the almost invisible line of separation between the two tongues at the bottom of the ▽-shaped opening. The transverse bars joining the two lateral bars of the staple are here seen in section.

The admirable photographs of the Dulduff staple show the thin metal, with its inner roll, in which a wire was inserted, absolutely imbedded in the casting (pl. iv, figs. 2 and 3). In this instance the ring does not impinge wholly upon the rim.

Pl. III, fig. 4 shows the simpler type from Edleston and Dowris. In the former case, owing to distortion of the rim by pressure, the outer vertical tongue has been thrust away from the side of the cauldron. On its inner side can be seen corrugations corresponding to those of the neck against which it was cast.

It will be at once observed that, although the practice of running the metal close in under the rim, as was done on the Shipton cauldron, is here also followed, experience had apparently taught that the rim alone did not give sufficient support, and that this could only be achieved by extending the casting, particularly on the inner side, so as to obtain an adequate grip on the corrugations of the neck.

The direction from which the metal was poured into the mould is shown by the frequent occurrence of remains of the jets on the top of each of the ribs of the ring-holder, as on the loops of the Shipton staple, and also by the irregular spread of metal in the vertical of the T-plate, an obvious result of omission to clamp the mould sufficiently tightly to the sides of the neck.¹ But, when it is remembered that during the process of casting on the staple, the heavy ring-handle had to be kept in position to allow the staple to be cast round it, one can only stand in wonder at the ingenuity, however misplaced, of these early bronze-founders.

The rings associated with cauldrons of Class A are generally round in section. Those of the cauldron from Ireland (no. 13 in Schedule 1) have a slightly lentoid section, though this may be partly due to some escape of metal at the joints of the mould in which it was cast, such as can be seen in the Shipton specimen. The rings of the Edleston and Derreen cauldrons are, how-

¹ The effect of the casting is exactly that of the socketed axe from Felixstowe (now, by the generosity of Sir Arthur Evans, together with the rest of his father's prehistoric collections, in the Ashmolean Museum), which was exhibited to the Society by Sir John Evans in 1885 and figured in *Proceedings*, vol. xi, 9, fig. 1.

ever, four-sided in section, an interesting deviation from the usual type to which I shall have occasion to recur at a later stage; the Dulduff ring is almost hexagonal.

The rivets are invariably of a quite simple character, usually flat-headed on one side and burred up on the other. In the Edleston cauldron the burred

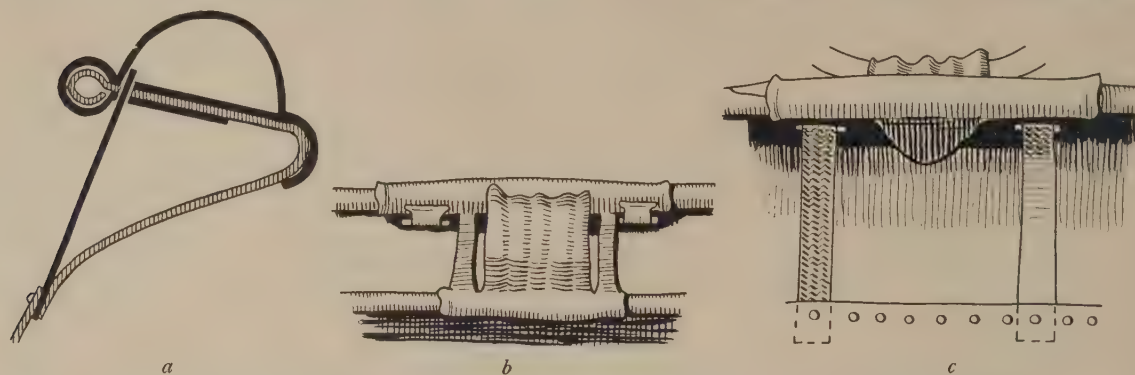


Fig. 2. Section and details of staple of the Llyn Fawr cauldron; after sketches kindly supplied by Mr. W. F. Grimes. ($\frac{1}{2}$)

end is further secured in some places by washers, just like the modern flat-headed rivet used for joining leather straps or the like.

CLASS B. *Body.* The body itself may here vary from an almost spherical form like that of the Battersea cauldron (pl. vi, fig. 1) or a subconoid like that of Ireland, W 13 (pl. iv, fig. 4), both already known in Class A, to a depressed spheroid, which in section would appear as an ellipse, as that from Milkernagh Bog (pl. iv, fig. 5). It is built up, as in Class A, of several plates from the upper row of which the neck and rim are constructed. But these are of an entirely different character from those of Class A. This is best explained by fig. 2 *a*, where it will be seen that the corrugated neck has entirely disappeared. In place of this the junction of the body and brim has been hammered round a rod so as to form a little more than half of a tube. This in practice would, like the corrugated neck, lend strength at what would otherwise be a point of great weakness if the brim had been turned back at a sharp bend or even in a simple curve. In effect, what has happened is that the diameter of the mouth in relation to the greatest diameter of the cauldron having been greatly lessened, what was the neck and rim of Class A has been bent down and outwards to balance the increased width of the shoulder.

The outer edge of the brim is also turned into a roll of a size to correspond with that at the neck, and these rolls were sometimes, as in the West of Scotland cauldron, further reinforced by the insertion of a separate tubular roll of sheet-

metal. One or more corrugations may appear in the width of the brim. These, apart from their obvious practical value for strengthening purposes, seem to point to those of the neck of Class A, which in Class B has been merged in the brim itself.

Staples. The most important result of this change of form is that the staples could no longer be set on the top of the rim, but had to be affixed to the inner face of the brim itself (pl. vii, fig. 1). In many cases no radical difference is observable in the type of staple employed, but among the cauldrons of this class the method of securing the staples shows a variation of so striking a character that on that ground alone there is ample justification for subdividing this class into two groups according to the method employed.

SUB-CLASS B 1. The staple bears a close resemblance to the more advanced forms of Class A. The ribbed holder has always lateral flanges, which are rather more pronounced than the rounded ribs between them, and is inclined to be broader transversely owing to the greater width between the horizontal bars which clip the brim at its outer edge and at the edge of the mouth. The number of ribs between the flanges does not show the same consistency as in Class A. While there are usually three, the cauldron from the West of Scotland has only two (pl. v, fig. 1), and that from Milkernagh seems to break a rule in having four.

The external horizontal bar is furnished, as in Class A, with a vertical tongue, and this reaches almost to the shoulder. On the inner side of the brim it is omitted. Even here, as in the West of Scotland cauldron, the faulty closing of the mould has allowed a thin, irregular mass of metal to spread from the edges of the T-shaped plate. The horizontal bars are cast in a half-tubular form usually with A-shaped mouldings near each end by way of reinforcement. Possibly the vertical tongue of the exterior plate would to some extent counteract the strain imposed on the rim in lifting the cauldron when full, by thrusting against the shoulder at the point reached on its underside by the inner bar which clasped the junction of brim and shoulder.

On the Llyn Fawr cauldron the horizontal bars are joined by a narrow transverse strip on each side of the ribbed holder,¹ and between the flanges of the holder grooves replace the usual rounded ribs (fig. 2 b).

But that this did not meet all the difficulties created by the adoption of the broad out-turned brim is shown by the addition of external and (or) internal stays. The latter are uniform in type, consisting of a pair of twisted rods beaten out at their base into curved finials which are riveted to the wall of the cauldron. What happens at the upper end it is difficult to say, since they disappear between the wall of the vessel and the horizontal bar clipping the

¹ Only on one staple; on the other the casting of the cross-bars is imperfect.

A BRONZE CAULDRON FROM

inner edge of the brim. Presumably they are hooked round the corrugation formed by the junction of the brim and shoulder. Such struts occur on the cauldron from Raffery Bog, Killinchy, co. Down (fig. 3), and on that from the West of Scotland. In the last named on one side the stays have broken away at some period of the cauldron's active life. Holes have then been pierced through the shoulder and rim, and through these the broken stay has

been passed and bent over at each end to form hooks by means of which the strain could be transferred from the brim to the body of the cauldron (pl. v, fig. 2).

This was the crux of the problem which the internal stay only partially solved. In consequence recourse was necessary to external stays of which several varieties occur.

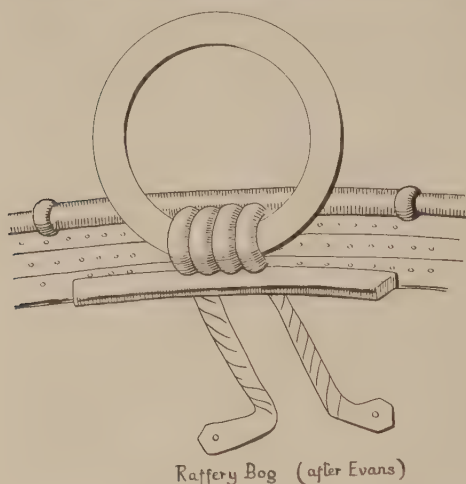


Fig. 3. Detail of inner struts in cauldron from Raffery Bog, Killinchy, co. Down.

(a) Milkernagh. Two twisted stays, terminating below in flat finials, which are pierced and riveted at the junction of the upper and second tier of plates, disappear above into the staples, and doubtless are hooked round the brim in the manner already suggested for the interior stays of

a similar make, which this cauldron also possesses (cp. fig. 3).

(b) Ballyshannon. A narrow band is stretched from the outside of the shoulder up to the rim, follows the contour of the brim on either side of the staple, and curves round the inner wall of the vessel until it reaches the point from which it started outside. At this point the two ends of the band are riveted together through the wall of the cauldron. The bands are further kept in place by two rivets in each band through the middle of the brim (pl. vi, fig. 3).

(c) Combining features of both the foregoing are flat strips usually decorated with incised herring-bone ornament. This is well illustrated in that from the West of Scotland (pl. v, fig. 3) and in the Llyn Fawr cauldron. In the latter example they are riveted at their base to the body of the vessel at the junction of the first and second row of plates, while their upper ends, after passing through a slot in the rim on either side of the loop of the staple, have been expanded so that, when the cauldron was lifted, the body took up the strain (fig. 2 c).

(d) In the fine cauldron from Raffery Bog with its strongly corrugated brim, the stay takes the ornamental form of an open-work triangular plate, a tongue at the apex being folded round or riveted to the brim. Presumably the

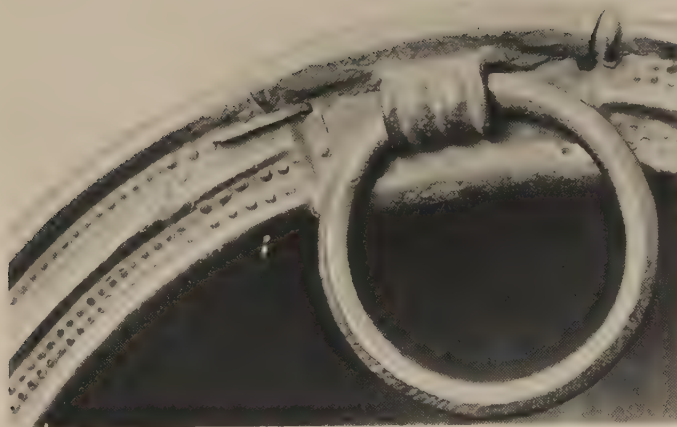


Fig. 1. Detail of staple and ring of cauldron from the West of Scotland. National Museum of Scottish Antiquities ($\frac{1}{2}$)



Fig. 2



Fig. 3

Details of staples and stays of bronze cauldron from the West of Scotland. National Museum of Scottish Antiquities ($\frac{1}{2}$)



Fig. 1. Battersea. British Museum ($\frac{1}{6}$)



Fig. 2. Detail of cauldron, W 13. National Museum, Dublin ($\frac{1}{2}$)



Fig. 3. Detail of cauldron from Ballyshannon, co. Donegal. National Museum, Dublin

base of the triangle is riveted as usual at the junction of the first and second tier of plates, though this is not evident from the original illustration.¹

(c) Rivets were certainly employed to secure the highly decorative stays, originally four in number, on the Donaghadee cauldron (pl. vii, fig. 2). The open-work frame with its two bossed discs has two projections at the top in which the rivet-holes are clearly visible. Below, the frame seems to have been riveted in turn over the apices of two open-work triangles resembling those used as stays on the cauldron from Raffery Bog, but here smaller and riveted close to the shoulder of the vessel. The large rivet-heads are merely rounded, not conical as on most examples of Class B 1.

Rings. In this class we meet with greater elaboration in the rings. That from the West of Scotland is hexagonal in section. In W 12 the faces of the hexagon are slightly fluted, while in the Llyn Fawr and the Ballyshannon specimens this process is carried still further, not only in the depth of the grooves, but in the multiplication of the faces thus decorated.

Rivets. A further deviation from Class A is the frequent employment of conical rivets. Sometimes, as on the Llyn Fawr cauldron, short and stumpy; on others sharply pointed and very prominent.

Brim. The brim, too, offered another field for decoration. In place of the simple corrugations, three in number, which apparently occur, even in an otherwise elaborate cauldron like that from Raffery Bog, a middle corrugation on the Ballyshannon vessel is ornamented with transverse lines; while on others, for example West of Scotland and Milkernagh, the surface between the corrugations is covered with rows of dots embossed from the underside of the brim. On a cauldron from Derry Bog, Carberry, co. Cork,² the decoration is carried out in panels, rows of embossed dots alternating with diagonal lines.

Here it is necessary to draw attention to a misdescription which might give rise to a false idea of the construction of one of these cauldrons. In the original account of that from the West of Scotland it is stated that the surface of the brim between the corrugations is decorated with small holes. This is not so. The presumed holes are simply embossed dots which have worn through (pl. v, fig. 1). Nothing could give a better idea of the high value set upon these wonderful vessels than an examination of the brim of this particular example. In places the surface of the brim has been carefully patched with little pieces of sheet-bronze on which dots have been embossed to match those which had worn away by long use.

It is obvious that, while for purposes of convenience it is useful to attempt some classification of these cauldrons, examples must exist which do not conform exactly to any of the classes, but present features of more than one, and

¹ *Ulster Journ. Arch.*, v, 82 (coloured plate).

² *Proc. Soc. Ant.*, xxii, 128, fig. 7.

may even be regarded as expressive of individual fancy on the part of the artificer. That in the National Museum, Dublin, known as W 13, is a case in point (pl. iv, fig. 4, and pl. vi, fig. 2). Its form is reminiscent of the more conoid examples of Class A, but it is furnished with a sloping brim, which though simpler and narrower, seems to herald the broad brim of Class B. The plates of the body are fastened together also with the conical rivets which are characteristic of Class B 1. The brim, however, is tilted at an angle intermediate between the vertical neck of Class A and the depressed brim of Class B. This has allowed the staple to be set over the outer edge of the brim in a position resembling that of Class A. The ring is thin and of circular section, like that from Portglenone (pl. iii, fig. 2), and is decorated with incised diagonal lines on the outer face.

The staple is curiously constructed. An oblong plate lies on the inner face of the brim and clips half the circumference of the wire-filled outer roll of the brim; this plate has Λ -shaped lateral borders, and is decorated along its outer edge with diagonal lines on each side of the ring-holder. Over this plate and cast as part and parcel of it is the holder, having six narrow ribs and clean-cut vertical ends, and protracted downwards in long strips which follow the line of the brim externally and internally as far as the base of the junction of the first and second row of plates. The outer strip is decorated with a herring-bone design and has a large conical rivet at its base. The photograph (pl. vi, fig. 2) shows clearly where the metal has extruded itself from the sides of the mould in which this outer strip was cast.

The method of casting the staple on to the cauldron has greater affinities with that employed in Class A than in Class B 1, but the Λ -shaped flanges on the horizontal bar and the decoration of the external vertical strip recall details common in Class B 1.

SUB-CLASS B 2. This sub-type has been created to include examples in which the staple, instead of being cast directly on to the brim, has been cast as a separate element, and subsequently fastened to the cauldron by various methods. Before, however, proceeding to a description of these, it may be well to observe that in correspondence with this variation the staples themselves present a different appearance owing to a strong accentuation of the terminal flanges of the ring-holders. These receive a sufficiently large accession of height to enable them, at the base of their curve, to flank each end of a narrow horizontal strip which projects from the base of the other ribs of the holder (fig. 4). It is from this horizontal flange that the staple is fastened to the brim. In addition, the terminal flanges of the holder have not a vertical outer face. The flange becomes an ornamental frill, curving round the mouth of a tube which only begins at the level of the intermediate ribs.

The tubular bars, which formed an integral part of the staple in Class A and Class B I, are here unnecessary to secure the staple to the brim. But the brim is furnished with reinforcing tubes round the outer and inner edges, and on these, twin Λ -shaped mouldings are added at the exact points where such mouldings occur on the cast staples.

The ribbing of the staples varies considerably. On the Ballyscullion

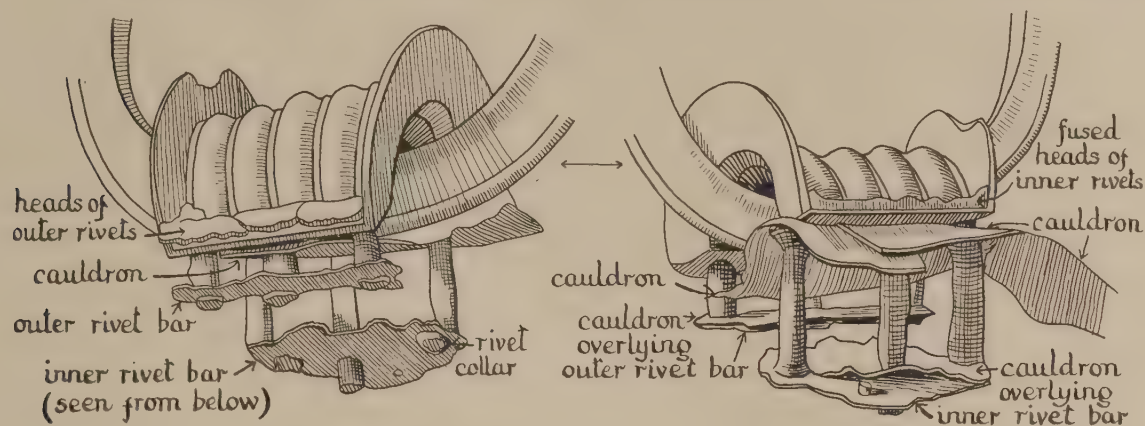


Fig. 4. Details of staples from Ipswich. British Museum. ($\frac{1}{2}$)

cauldron there are two rounded mouldings between the external flanges. Two staples from the Knowles collection, now in the National Museum, Dublin, have also two mouldings, but hollow. Another pair of staples (DU 2-3) at Edinburgh has three; while those on the Battersea cauldron and from Ipswich (fig. 4) have four rounded ribs divided by small additional Λ -shaped mouldings.

The method of attachment of the staples is the most interesting feature of this class. On the Ballyscullion cauldron a small, perforated lug, set at the middle point of each lateral horizontal flange of the staple, passes through slots in the brim, and is secured by an elongated bronze loop which is threaded through the two lugs. The problem of strain on the brim is here still unsolved, and in consequence there are external stays from the shoulder to the brim as in Class B I, some near the handles and others at various points of the circumference. Only one is perfect, but it shows that from their lower end they followed the curve of the shoulder upwards to a point vertically below the inner edge of the outer reinforcement of the brim. From that point the stay is bent perpendicularly upwards, and passes through a slot in the brim. One is placed at each end of the outer reinforcing tube and is apparently secured by the rivet which holds the tube in place. Other stays, intermediate between the handles, act in exactly the same manner as on the cauldron from Llyn Fawr (fig. 2, *b* and *c*).

The defect above noticed was, however, entirely remedied in the other examples. It has already been remarked as strange that in securing the staples to the brim the artificer should have resorted to complicated methods of casting, when rivets would have sufficed, and it is therefore little short of amazing to find that, even when a system was employed which has all the merits of riveting, the rivets too should have been cast.

From the horizontal flanges of the staples three rods pass through the brim and shoulder to a corresponding flat bar on the inside of the cauldron. Naturally, owing to the angle of incidence of brim and shoulder, the rods at the outer edge of the staple are longer than those at the inner (fig. 4). This system of a double grid of vertical rods and transverse bars was admirably fitted to take the lifting strain of the cauldron when fully loaded. But what is extraordinary is that the rods are not true rivets, though they have all the appearance of such, and that, too, in spite of the fact that nothing could have been easier for such skilled craftsmen to make.

Here, too, the tradition of casting (for it can hardly be regarded in any other light) still holds good. After the horizontal flanges of the staple, the brim and the shoulder had been pierced, the cauldron was turned almost upside down, and the whole system of fastening, namely six rods, i.e. two sets of three with a transverse bar across the ends of each set, was *cast* from the interior of the cauldron, where remains of the jets appear as terminals of the three rods. To effect this process involved three moulds, one inside the cauldron, one with six tubes between the shoulder and the brim, and one over the horizontal flanges of the staple. Below the brim and above the shoulder a little collar of escaped metal can be detected, and the metal forming the transverse bar above the horizontal flange of the staple has sometimes, after passing through the tubes of the intermediate mould, begun to cool before it had time to coalesce into a perfect bar.

Typology of the cauldrons and buckets.

Cauldrons. Typologically it would seem that in Class A greater elaboration of the staples must be equivalent to an advance in date. On that basis we can divide Class A into three groups:

(1) Shipton, Edleston, Derreen, Tul-na-Cros, W 14 from Ireland, Dowris (one complete and one fragment), and finally Cloonascurragh Bog partly repaired according to type 2 or 3. In all these the ring works between the loop and the rim itself. That from Cloonascurragh Bog comes last by reason of having five ribs instead of only three.

(2) DU 4 from Scotland, Dulduff, and one unnumbered and without



Fig. 1. Near Donaghadee, co. Down. Belfast Museum (*c.* $\frac{1}{5}$)



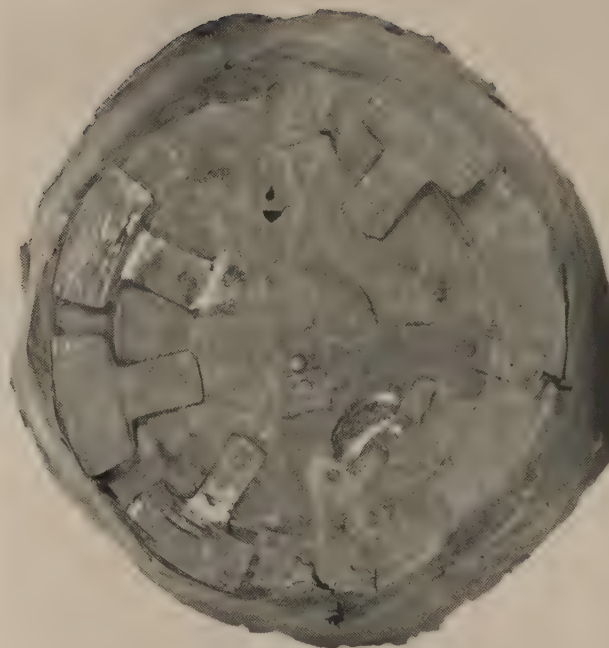
Fig. 2. Near Donaghadee, co. Down. Belfast Museum (*c.* $\frac{1}{3}$)



3



2



1

Details of bronze buckets showing reinforcing plates on the base, (1) W 15. National Museum, Dublin; (2) and (3) Derrynacash, co. Armagh. National Museum, Dublin; (4) Dowris, Co. Offaly. British Museum

provenance in Dublin, with transverse bars; the first and third preserving the triple-ribbed tradition, the second with five ribs.

(3) Portglenone, one in the Ashmolean Museum, and possibly the other at Belfast; the holder cast with an apparently complete plate separating the ring from the rim, and with terminal flanges on the ring-holder.

In Class B 1 the staples themselves form, with three exceptions, a homogeneous group, and there is little in them sufficiently distinctive to admit of chronological differentiation. The details of the form and staple of Ireland W 13 suggest an early stage, while, on the other hand, the triangular stays of the Raffery Bog cauldron and the elaborate stays on that from Donaghadee suggest an advance on the rest. Moreover, these latter two are associated with ring-holders, thin and with their inner surface following the lines of the external contour, and also with rings of $\boxplus$ section, both marked features of Class B 2. When the West of Scotland cauldron had to be repaired after the breakage of two internal stays, the work was carried out along the lines of Class B 2.

It is hard to judge how far Class A and Class B 1 represent contemporary types, the one simple, the other more elaborate, but probably the first two types of Class A are antecedent to Class B 1, while the third variety of Class A is certainly contemporaneous with Class B 1, since both possess details which are carried to a still more advanced stage in the cauldrons of Class B 2, particularly the terminal flanges on the ring-holder. This type of holder was, it will be remembered, used to repair the Cloonascurragh Bog cauldron.

Buckets. These, as has already been noted, offer some points for comparison which it seems well to take into consideration. There is only one form, closely resembling the Italian type, with outwardly sloping rim set almost at a right angle to the shoulder. The staples closely resemble those of Class A of the cauldrons, with ribbed holder, horizontal side-bars and vertical tongue, the latter usually omitted on the inside of the bucket. The holder is set on the inner sloping face of the brim, so that the rings naturally fall towards the inside of the bucket. The horizontal bars clip the outer edge of the brim and the angle formed by the junction of the brim and shoulder internally, while the tongue on the outer bar fits the external angle.

Like those of the cauldrons, the staples, except in one instance,¹ are cast on to the buckets, and in most cases resemble those of type 1 of Class A, described above. A staple in the hoard from Meldreth, Cambridgeshire, however, presents a contrast. While in the others the ring works in a loop formed

¹ The exception to this rule is the ornamented bucket from Cape Castle Bog, near Armoy, co. Antrim, in which the staples are riveted to the brim.

by the holder and the rim of the cauldron, the Meldreth example has been cast so as to leave a tube entirely free from the rim as in Class A, type 3.

The ribs of the staples vary considerably. The simplest in appearance is one on a bucket deposited by the Royal Irish Academy in the National Museum, Dublin (57. 1901), where there are three rounded ribs. One from Armagh (114. 1898) has four ribs. That from the Duddingston Loch hoard has three flat-topped ribs separated by grooves; the Meldreth staple has five ribs of the same type.

In every case the ring is four-sided, usually square in section.

Relative chronology.

The relative chronology of the various types of cauldrons and of the buckets is by no means so easy to determine as a typological study would suggest, but on general grounds it would seem that the buckets as a whole correspond in time with Class A of the cauldrons, and that Class B 2 is later than Class B 1.

Even an examination of the hoards in which some of these vessels have been found does not bring out points of distinction in sufficiently sharp relief to place the question beyond dispute, and, as will be shown later, seems to run counter to the evidence afforded by the distribution of the vessels themselves. But a review of the contents of the hoards may help to clarify the position.

Evidence from hoards (see fig. 5).

The largest number of hoards is associated with buckets, though the Heathery Burn cave alone produced a complete example. Those of Hatfield Broad Oak,¹ Meldreth, and Duddingston Loch contained only rings and staples. At once it becomes clear that they all belong to one period. For, even though the Heathery Burn find cannot be regarded as a hoard in the strict sense of the word, the various objects discovered in the cave are evidently closely related in point of time, a fact which forcibly supports Canon Greenwell's theory of a catastrophic flood to explain their abandonment. Among the relics from the cave and found close to the bucket were a socketed axe with vestigial wings and a bracelet made of wire doubled so as to leave a broad loop at the middle, which was to receive the hooks bent at the free ends.²

From Hatfield Broad Oak we have also socketed axes with vestigial wings, and further a looped tube, as Evans, figs. 493-5. One of these last was

¹ The curved plates with longitudinal and transverse linear decoration (*V.C.H., Essex*, i, pl. opp. p. 268, figs. 32-3) belonged to the base of the bucket; they are not rims of a large vessel as described in the text.

² J. Evans, *Ancient Bronze Implements* (hereafter cited as *A.B.I.*), 386, fig. 483.

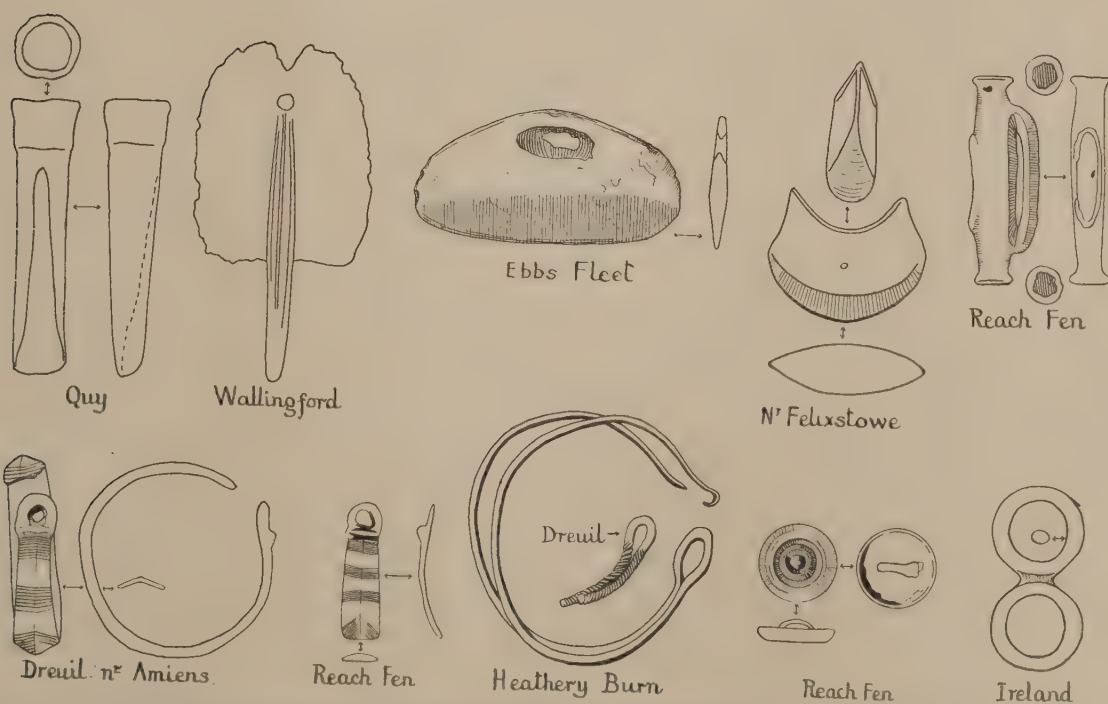
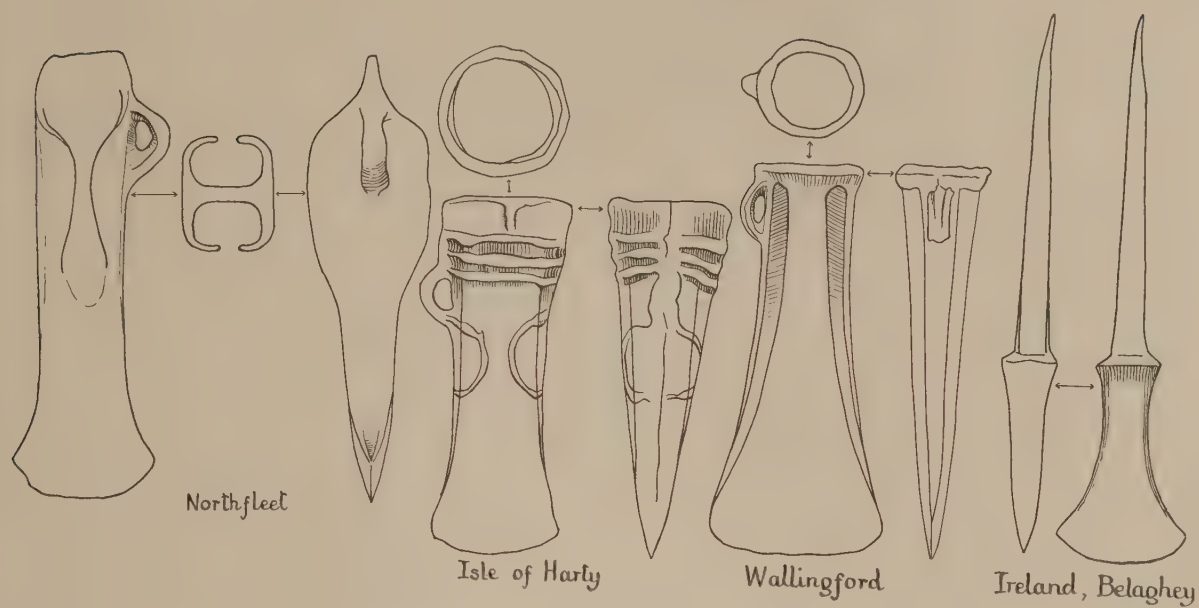


Fig. 5. Types of bronze implements and ornaments contemporary with the cauldrons and buckets. Except the razor from Ebbs Fleet, all in the Evans Collection, Ashmolean Museum ($\frac{1}{2}$)

found at Melbourn, Cambridgeshire, along with a socketed gouge. This leads us to the Meldreth hoard from the same county with its tanged chisel and lunate knife or razor with a hole for suspension. And by way of cross-reference we have the hoards from All Hallows, Hoo, Kent,¹ one of the principal hoards in this country, containing winged axes of continental type, with a similar knife, socketed gouges and axes; from Ebbs Fleet, Isle of Thanet,² with lunate knife and looped tube; from Eaton, Norwich,³ with the same objects and further a tube with hooks, noted by Canon Greenwell as part of an instrument similar to one decorated with aquatic birds from co. Antrim.⁴

Among the constituents of the Duddingston Loch hoard were several fragments of swords and spears, some of the latter with lunate openings in the blade (fig. 6 *b*), as Evans, figs. 418-20, and others of his Speen type (fig. 6 *a*), specimens of which in the Broadward (Shropshire) hoard were associated with a looped tube akin to that from Hatfield Broad Oak.

There is in short nothing to distinguish these four finds associated with buckets from one another and they can all be certainly assigned to the late Bronze Age. There can, I think, be no question of their deposition in the Iron Age. Of the four, that from Duddingston Loch is probably the latest, since the looped tube from the Broadward hoard suggests a poor copy of specimens like the Essex example. On the other hand the uncertainty whether the fragments of swords belonged to the notched type may be held to leave the question open.

One bucket has as yet not been taken into account, that from the Dowris hoard. It does not stand alone, but was associated with a cauldron of Class A and a ring and staple of Class B₁ (see Schedule, nos. 11, 30, and 31). The close resemblance of the staples of the buckets to those of cauldrons of Class A, the rings of four-sided section, which also occur in Class A and rarely in Class B₁, and the absence of conical rivets, a striking feature of Class B₁, suggest that taken as a whole the buckets are contemporaneous with cauldrons of Class A.

Owing, however, to the persistence of the Bronze Age in Ireland beyond the time when iron-using invaders had brought it to a close in many parts of Great Britain, it is difficult to correlate exactly hoards found on the two sides of the Irish Channel, the more so when some of the objects in the Irish hoards are peculiar to Ireland itself. But, if we may assume that the trumpets of the Dowris hoard can by reason of their conical bosses be brought into line at any rate with cauldrons of Class B₁, then the suggestion that the bucket from Duddingston Loch may be somewhat later in date than the English examples finds corroboration in the presence in the Dowris hoard of spears with lunate open-

¹ *Arch. Cant.*, xi, 123.

² *Proc. Soc. Ant.*, xiv, 309-11.

³ *Ibid.*, xi, 42.

⁴ British Museum, *Guide to the Bronze Age*, 2nd ed., fig. 109.

ings in the blade. The Dowris cauldron and buckets would then be hoarded treasures, older than other constituents of the hoard.

In addition to the Dowris hoard two others are associated with cauldrons of Class A, that from Kilkerran with three socketed axes and two fragments of

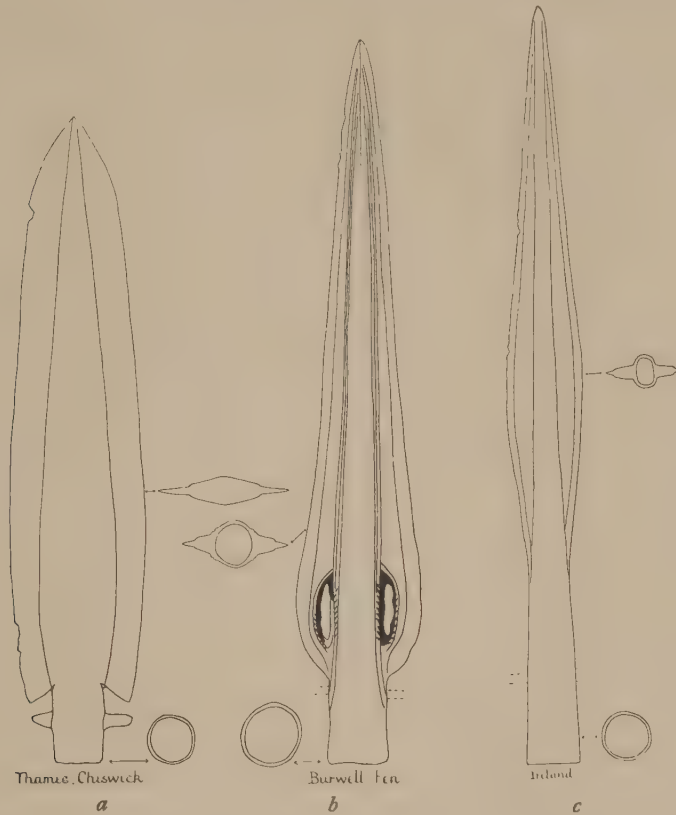


Fig. 6. Types of bronze spears contemporary with the cauldrons and buckets. Evans Collection, Ashmolean Museum. ($\frac{1}{3}$)

swords, and Ireland (W 14) with a socketed spear, neither sufficiently distinctive to tell us more than that they belong to the close of the Bronze Age.

The only hoard associated with Class B 1 or B 2, namely that from Poolewe, Ross-shire (for I presume that a ring of H-shaped section should be assigned to one division of that class), does not tell us much. It contained three looped and socketed axes, decorated with vertical ribs terminating in 'bull's-eye' circlets, a hollow ring pierced through each side and a penannular brooch with trumpet-shaped ends. The two last point undeniably to Ireland; the ring seems to belong to a brooch or fastening of the type of that from Trillick, co. Tyrone, figured by Sir John Evans (fig. 496), and of the other, though uncommon in bronze, gold examples occur with some frequency in Ireland and are known

from Scotland. One of the most recent discoveries was made in 1921 on the west coast of the Isle of Arran by Mr. Ludovic Mann, where it was found associated with a smaller penannular brooch of another type familiar in Ireland, and fragments of pottery assigned by the finder to the latest Bronze Age.¹

Distribution of cauldrons and buckets in the British Isles.

When we consider this distribution in the light of typology, the conclusions point to Ireland as the focus from which both cauldrons and buckets spread to Scotland and England. For it can hardly be disputed that vessels with such distinctive features of construction occurring within so limited an area must have emanated in the first instance from a single centre. That being admitted, we have to be guided by such specimens as have come down to us, and thus, in spite of the more favourable conditions for survival afforded by the Irish peat-deposits, we must, I feel, concede that the scales weigh heavily in favour of Ireland as that centre.

In the matter of cauldrons of Class A, all three types are represented in Ireland with Type 1 preponderating. In Scotland we have Types 1 and 2, and in England Type 1 only, and that with a somewhat exotic feature, since the casting of three separate loops to the staple appears to be either an imperfect understanding of a triple-ribbed staple, perhaps once seen, or an attempt to improve upon the original. It cannot be regarded as the prototype.

Again, Ireland is rich in examples of B 1; Scotland has one, Wales has one, and both these could well have been either Irish exports or made under Irish influence. In England so far B 1 is wanting.

Two of the Irish specimens lead, as we have seen, directly to Class B 2, which again is well represented in Ireland, occurs in a hoard of Irish complexion found in Scotland, and is known by two examples from south-east England.

The evidence of the buckets points in the same direction. In the matter of form their derivation from a type like the Italian situla is of course indisputable, and corroboration is afforded by a detail of their construction such as occurs on buckets from Derrymacash, Dowris (three examples), and that known as W 15 in the National Museum, Dublin. On these the base is secured to the body of the vessel by angle-plates riveted to the sides and bottom. Their nature is shown in pl. VIII, figs. 1-4. We are at once reminded of a situla from the Tomba del Duce at Vetulonia (pl. IX, fig. 1),² on which the base is similarly strengthened with a ring of plates (pl. IX, fig. 2). In the original account it is stated that there is a complete ring of sheet-bronze fashioned in a manner

¹ *Glasgow Herald*, 30 April 1921.

² *Not. d. Scavi*, 1887, p. 487; Tav. xv, 8 and 8a.

which gives it the appearance of a series of angle-plates each stamped with a chequer pattern at the middle and that each chequer is furnished with *two* rivets.¹ Close examination of the photographs (pl. ix, figs. 1 and 2) shows this

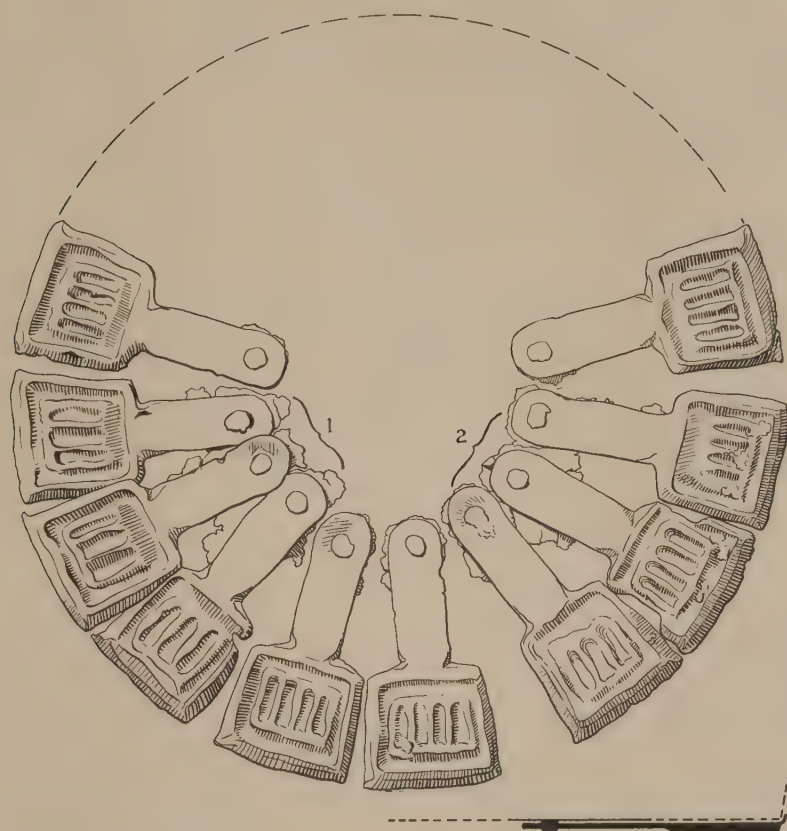


Fig. 7. Reinforcing plates from a bronze situla, Talamone, Tuscany; viewed from below and in section. Ashmolean Museum. ($\frac{1}{2}$)

to be an entire misdescription. There are no angle-plates like those on the British buckets. The rivets (pl. ix, fig. 1) round the base of the walls serve to attach to the body of the situla the bottom, which was hammered out from similar sheet-metal. To strengthen the thin metal of the base the makers of the situla resorted to the expedient of adding a ring of foot-plates, set close together and each secured to the base of the situla by a rivet at the inner end

¹ The actual text (*loc. cit.*) reads:—È liscia (i.e. the situla) e priva di decorazione: ma il suo fondo ha una particolarità che merita di essere notata. All'estremità della parete verticale, è aggiunta all'ingiro un gran fascia della medesima lamina, fortemente assicurata con fitti chiodi ribaditi, la quale, tagliata a scacchi uguali, si ripiega nell'interno per ricevere e sostenere il fondo della secchia, fermato con due chiodi per ogni scacco, in modo di dare un grande solidità al fondo medesimo, e costituendo un elegante disegno con la disposizione degli scacchi.

A BRONZE CAULDRON FROM

of an inwardly projecting tang. How these plates were secured round the periphery of the base is not clear, for that they have no upturned flange is proved by a series of analogous plates from Talamone, Etruria (fig. 7).¹ These are



Fig. 8. Bronze bucket from Cardross and base of the same. After *Proc. Soc. Ant., Scotland*. (c. $\frac{1}{2}$)

bronze castings, as those on the Vetulonia situla must also be, and were similarly arranged on the base of a situla. Each plate, of which the form, decoration, and thickness are shown in figure 7, has a rivet at its inner end, still in most cases holding in place a fragment of sheet-bronze. In two groups of three plates (bracketed 1 and 2 in the figure) it has been found possible to fit together the fragments of sheet-metal and in this way to establish the original circular disposition of the plates. The rivets on the base were apparently the sole method of attachment, the outer end of the plates having no upward flange as in the Irish examples.

The concentric rings on those of one of the Dowris buckets (pl. viii, fig. 2) affords a fairly close parallel to the Vetulonia situla. The ribbed decoration shown in pl. viii, fig. 3 is a divergence and leads eventually to the wheel-shaped reinforcing plate of the buckets from Cape Castle Bog, Armoy, co. Antrim; Cardross, Dumbartonshire (fig. 8); and from the Heathery Burn cave, Durham. The intermediate stage is well illustrated by the plates (wrongly described as parts of the rim of a large vessel) from the hoard found at Hatfield Broad Oak, Essex.²

The staples also from Heathery Burn cave, Hatfield Broad Oak, and Meldreth,³ have five ribs, in the last two cases with flattened tops. By contrast, those from Duddingston Loch and more than one Irish example have three well-rounded ribs only.

On all counts, therefore, the Irish series, of cauldrons and buckets alike, seems to stand first, not only in the wide range of its types, but also in the preponderance of early features.

We arrive at once at a compromise. Many of the objects which charac-

¹ Ashmolean Museum, 1890, 583, presented by the Rev. G. J. Chester.

² See p. 16, *supra*, n. 1.

³ In the Meldreth hoard there is what appears to be part of another staple with eight very flat ribs.

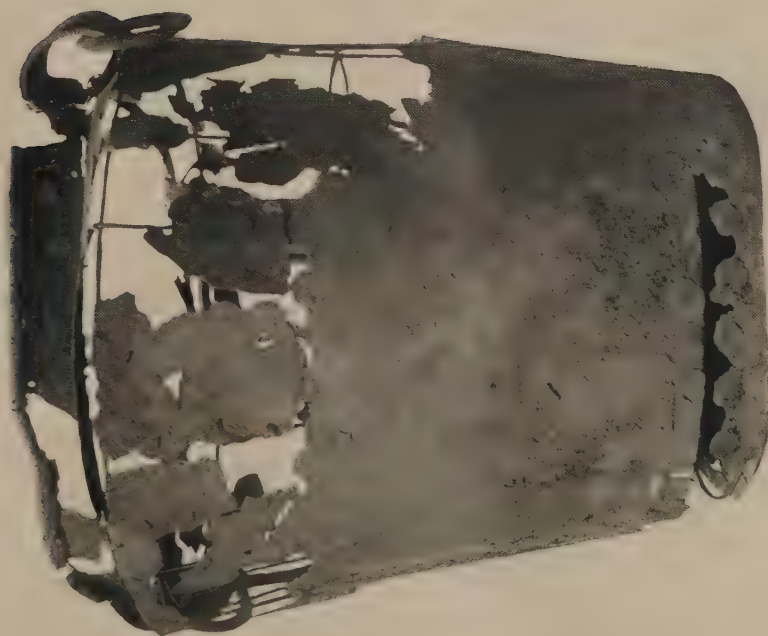


Fig. 1. Bronze situla from the Tomba del Duce, Vetulonia (4)

Museo Archeologico, Florence



Fig. 2. Base of bronze situla from the Tomba del Duce, Vetulonia (4)

Published by the Society of Antiquaries of London, 1930



Fig. 1. 'Dinos' from Rhodes. Berlin Antiquarium ($\frac{1}{3}$)



Fig. 2. Detail of handle of a 'dinos' from Rhodes ($\frac{1}{3}$)

terize the finds containing buckets in England also occur in Ireland, but with nothing like the same frequency, and evidently passed thither by the same channels which brought the cauldrons and buckets to England. In the light of the striking evidence of sea-trade about the same time between Ireland and Scandinavia, to which Dr. Adolf Mahr has recently drawn attention, a similar interchange of products between Ireland and Britain need present no difficulties, though a specimen like the Shipton cauldron does suggest that some of the vessels are rather imitations than direct imports.

Absolute chronology.

The discoveries of recent years have tended to throw back the beginnings of the Iron Age in England, or rather in certain parts of the country, to an earlier date than had previously been conceived as possible. One of the points emphasized by these discoveries has been the contrast between the eastern counties and the region comprising a large part of the southern counties and the Midlands. Frequent remark has been made on the scarce occurrence of the earlier stages of the Iron Age culture in Eastern Britain and the counter-vailing frequency of a late Bronze Age culture, some idea of which may be gained from the account of the hoards associated with the buckets, and from others cited by way of illustration. This particular phase of the Bronze Age culture of Britain is marked by several noticeable types: winged axes (not very common), as at All Hallows, Hoo; socketed axes with vestigial wings, and others with sockets of octagonal section (frequent); swords, with deep square notches below the guard; looped tubes; razors, lunate or tanged (Evans, fig. 269), and of rare occurrence, but particularly noteworthy, certain types of bracelets, the one as Evans, fig. 483, to which attention has already been drawn, and a penannular type, formed of a narrow band, slightly rounded externally, and terminating in flat rings (as from Dreuil, near Amiens, fig. 5).

There can be little question about the source of this combination of types. They must originate from a region in close contact with Switzerland, more particularly the western lakes, since many of the types are at home there. It is even possible that the movements, to which their diffusion as far as the British Isles is due, were actually initiated in Switzerland. A study of those movements and their causes is outside the scope of this paper, but their character was manifestly migratory. This becomes clear from an examination of the composition and distribution of certain bronze hoards in France. It may be taken as an axiom of Bronze Age archaeology that the really great hoards are essentially local in character, and that in two senses. First, they comprise types of implements and the like that belong to, that is to say are native to, the region in which the locality of their deposition is situated. Such are the hoards

of Larnaud in the Jura, that of San Francisco, Bologna, and some of the numerous Breton hoards. In the second sense they consist of objects which were in common use or were manufactured by the inhabitants of the locality. The distinction between this and the first may seem very narrow; but it becomes, I think, clear when we meet in widely separated parts of France large hoards whose contents at once leap to the eye as intimately connected with Switzerland. Here we are confronted not with distant trade but with the presence of settlers. After all, the routes which prehistoric trade is judged to have followed would also be the natural and obvious line of advance for any migratory bands.

But if the movements originated in Switzerland, they must have halted on the way, since we find the culture manifested in these hoards tinged by influences which lay outside the Swiss sphere. In fact, eastern France adjacent to Switzerland seems to be indicated. The main reason for this is the presence in so many of the hoards of socketed axes with vestigial wings. In Switzerland the winged axe proper is common; the other is very rare.¹

It is unnecessary to cite more than two or three outstanding hoards to illustrate the above argument. Two from the north of France are Graville Sainte-Honorine² and Dreuil, near Amiens.³ The former contains many of the principal types previously cited and others equally significant. The second, described only in part by Sir John Evans, though it lacks some of the features which distinguish the first, has a strikingly large Swiss content. Here we have an indication of the line travelled by a migrating folk, unquestionably Keltic, who descended on the east of England, and were long enough in undisturbed possession for the new types which they introduced to spread afield, even though somewhat sporadically. More was not possible, for almost on the heels of the first movement there came a second which, bringing an Iron Age culture, entered mainly by the southern coasts, and conquering the South and Midlands brought the Bronze Age of that area to a close.

The third French hoard to which I wish to draw attention is that from Vénat, Charente,⁴ in the west. It consists of the same types as before—types that are to be met with at intervals along the routes which led from

¹ During a recent visit to the National Museum at Zürich I was particularly struck by its absence from the collections. Dr. Viollier and Dr. O. Tschumi have kindly confirmed the impression I then gained as to the difference between Switzerland and eastern France in this important respect.

² A. Dubus, *Carte et tableau analytique de la répartition du Bronze dans la Seine-Inférieure*. (*Extrait du Bulletin de la Société Géologique de Normandie*, xxxi, 1912.)

³ J. Evans, *A. B. I.*, 52, &c.; L'Abbé Breuil in *L'Anthropologie*, 1900, p. 503; 1901, p. 285; 1902, p. 467; 1903, p. 501; 1905, p. 149.

⁴ J. G. et G. Chauvet, *Cachette d'objets en bronze découverte à Vénat, commune de St-Yrieix* (1895).

eastern France to Aquitaine.¹ The routes, too, are those which were to be followed subsequently by the great migration of the Kelts to Spain in late Hallstatt times, about 600 B.C. Here at once we obtain a provisional *terminus ante quem* for most of the buckets and also for the simpler cauldrons.



Fig. 9. Detail of figured situla from Certosa (after Zannoni).

Whence came the prototypes of these vessels?

The resemblance of the British buckets to the Italian situlae is interesting, because, except for a situla carried by two men depicted on one of the figured situlae from Certosa (fig. 9), the situla from the Tomba del Duce (pl. ix, fig. 1) seems to be the only Italian example which is fitted with large ring-handles in place of the usual bucket-handle. It should be noted, however, that the staples are so arranged that the rings hang on the outside of the vessel. A situla from the Tomba Bernadini² and another from Sesto Calende³ have similar staples but no rings.

But at this point the resemblance stops. The staples of the Vetulonia situla are formed of strips of sheet-bronze, extensions of the body itself, turned downwards and riveted to the shoulder. The British staple constitutes too

For other literature on this and the preceding see Déchelette, *Manuel II*, I, Appendice I, pp. 21 and 104.

¹ e.g. Manson, Puy-de-Dôme (*Matériaux*, 1874, 396, pls. iv and v).

² Montelius, *Civ. prim. en Italie*, ii, pl. 366, fig. 18.

³ *Ibid.*, i, pl. 62, fig. 6.

A BRONZE CAULDRON FROM

distinctive a feature for it to have been an invention of the makers of the British buckets and cauldrons. We must evidently look elsewhere for its origin.

In the Greek world of the age to which these vessels belong we meet not only with large cauldrons whose form recalls that of some of our specimens, but also a ribbed handle in common use. It occurs on Rhodian vases of the

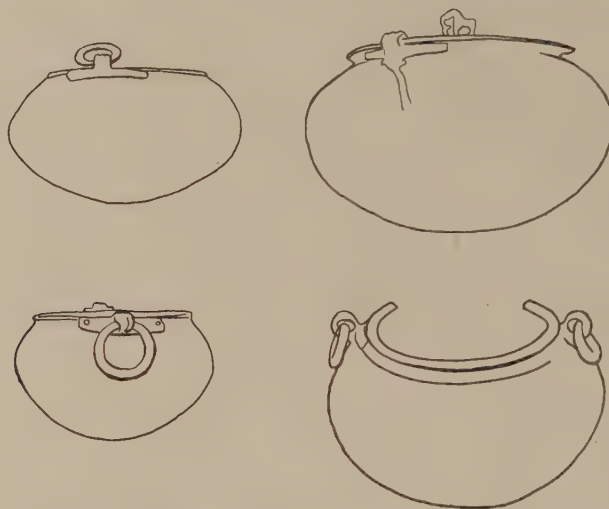


Fig. 10. Bronze cauldrons from Gordion, Phrygia (after Koerte).

eighth and seventh centuries B. C., and the type persists as a regular feature on black-figured Attic amphorae. In the Berlin Antiquarium is a *dinos* of Rhodian fabric which has two ribbed lugs or staples on its shoulder¹ (pl. x, figs. 1 and 2). On another the lug and ring-handle are reproduced in half-relief on the neck. They are here merely ornamental, since they are repeated four times round the vase.² These, particularly the former, are ceramic copies of bronze vessels such as that found at Gordion, Phrygia,³ dated *c.* 700 B. C. (fig. 10). The general aspect of the staples recalls those of Class A, and like them the Greek examples are cast in one piece, but seem almost invariably to have been riveted to the cauldron.

Another point of interest are the rings of Class B 2. Allowing for individual modifications in section they are of H or +H shape; in the latter the cross-piece of one T constitutes the inside of the ring. This, again, seems too peculiar to have been a mere British invention. When we look for some parallel we are at once reminded of the large rings which stand up vertically from the rims of the Greek *tripos*, numerous portions of which were discovered

¹ K. F. Kinch, *Fouilles de Vroulia*, 214 and 259, fig. 103.

² *Ibid.*, pl. 15, 1.

³ A. and G. Koerte, *Gordion* (*Jahrb. d. Deutsch. Arch. Inst. Ergänzungsheft*, v), 68-70.

at Olympia, Delphi, and elsewhere.¹ For though these are for the most part far more elaborate, yet their general construction is almost identical. The 'herring-bone' decoration of some of the external stays of the British cauldrons seems to echo that of the legs of the Greek tripods.²

The cauldrons which form the upper part of these tripods were usually hemispherical in shape, but examples with a neck and brim are known from representations on vases³ and coins of a later date.⁴ But the very fact that no actual specimens from this later date are known may indicate a survival in art of an archaic form⁵ (fig. 11).

It would seem, then, that attempts to trace back all the features of the British vessels to a North Italian source are liable to be fraught with difficulties, and that a preferable explanation of their origin lies in the assumption of a blend of Greek and Italian forms, with Greek types of handles predominating; in short, that the trade which reached our shores brought products from every Mediterranean mart. Have we here some echo of the struggle of the Greeks and Carthaginians for the sea-route to the Cassiterides? Is the legend of the Tuatha Dé Danann more than a myth? According to tradition it was they who introduced the sword, spear, and cauldron into Ireland.⁶ Whatever be the rights of the matter in regard to the sword and spear, there seems at least to exist some foundation in fact for the cauldron.⁷ Did Greek traders actually reach these islands?

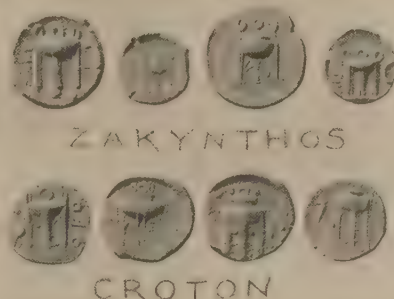


Fig. 11. Coins from Croton and Zakynthos with representations of cauldrons. (†)

¹ Furtwängler, *Olympia*, iv, Taf. xxiv-xxx; *Fouilles de Delphi*, v (texte), figs. 190, 195-7. I am indebted to Professor Beazley for these references.

² e. g., *Olympia*, IV, Taf. xxviii. 626-7, 631.

³ *Jahrb. d. Deutsch. Arch. Inst.*, xxxvi. 127. Furtwängler-Reichold, *Griechische Vasen*, Taf. 91 (by Phintias, from Corneto), 133 (by Andocides, c. 520 B. C.), with slight rim; *Mon. dell' Inst.*, vi/vii, 71, 2 (from Magna Graecia).

⁴ S. Grose, *Catalogue of the MacClean Collection*, i, pl. 54, 3-10 (coins of Croton, from 440 B. C.); and B. M. Cat., *Peloponnese*, pl. xix, 23 (Zacynthus, fourth cent. B. C.).

⁵ Professor Beazley has drawn my attention to a survival of the neck and brim on a black-figured vase (without handles) from Falerii Veteres in the Villa Giulia Museum (*Corpus Vasorum Antiquorum*, Italia, Fasc. III, pl. 55, 3), and again on the Amandola *dinos* (*Guida del Musco di Ancona*, 1915, p. 92 with fig.; *Dedalo*, I, 153, with excellent plate), regarded as a Greek, possibly Ionic, importation of c. 500 B. C. into Picenum. This *dinos*, however, has a pair of immovable bar-handles fixed to the shoulder and therefore stands still further removed from the prototype of the British cauldrons than the type shown on the vases and coins.

⁶ Lindenschmit, *Alterthümer unserer heidnischen Vorzeit*, iii. 10.

⁷ Cf. Strabo, iii, cap. V, § 11.

The Phocaeans are said to have had intimate relations with southern Spain from about 1000 B. C. until the Carthaginians won command of the Straits in the sixth century B. C. And, as we have seen, it is with the Greek, and especially with the Ionic world, that some of the closest parallels can be drawn.

Déchelette thought it was the Phocaeans that might have been responsible for the appearance of a seventh-century Istro-Venetic type of fibula in North Africa,¹ and equally they may have carried the Venetic bucket, in which a cremation burial was discovered at Rocher, Plougoumelen, in the Department of Morbihan,² by a route which left another in the Chalcidian colony of Leontini in Sicily.³

The evidence of the hoards in Britain makes for a date before 500 B. C.; that of the western French hoards for one before 600 B. C., and that of the current of historical events in the Mediterranean for a similar date. The prototypes in Greece and Italy speak for a still higher antiquity, and I would provisionally suggest that the models on which the British vessels were based reached these islands not later than the first half of the seventh century B. C., and, in the absence of comparable vessels in France, by a sea-route rather than overland.

The way is, indeed, indicated beyond all question by the discovery at the mouth of the Huelva river in southern Spain of two bronze spear-heads, the one of the type with large lunate slots in the blade associated with the Dowris and Duddingston Loch hoards, the other almost the counterpart of a masterpiece of hollow casting, a spear-head from Ireland in the Evans Collection (fig. 6c).⁴ The composition of the Huelva hoard is mixed, but it also contains objects which must come from South Italy.

In conclusion, I desire to express my thanks to all those without whose ready courtesy in answering my numerous inquiries, in supplying me with photographs, or in granting access to the collections under their charge, the completion of this project would not have been possible; to the Keeper and Assistants of the Department of British Antiquities in the British Museum;

¹ *Manuel*, ii, 855.

² *Ibid.*, ii, 761, fig. 292.

³ *Bull. Paletn. Ital.*, xxxviii, 30.

⁴ J. Mélida, *Arqueología Española*, 95, fig. 46, *q* and *r*. An 8-shaped bronze double ring in this hoard also occurs frequently in Ireland (e.g. fig. 5). Further interesting witness to the close synchronism of finds mentioned in this paper is the occurrence in this hoard of a 'broken-backed' Italian fibula (*loc. cit.*, fig. *y*), as also in the Vénat hoard (J. G. et G. Chauvet, *op. cit.*, 149, pl. xxiii, fig. 281), and again in a hoard found at Notre-Dame-d'Or, Vienne (Déchelette, *Manuel*, ii, 328, fig. 130, 9); paralleled by him by examples from Cassibile, Sicily (*ibid.*, 10 and 11). If the Huelva hoard is, as suggested, one complete deposit, and not a collection of objects which have accumulated in the bed of the river like those which have been dredged up from the Thames at Brentford, Professor Bosch's dating of 1200-1000 B. C. is, on the evidence of the slotted spear-head, unquestionably far too high (*Reallexikon der Vorgeschichte*, under Huelva).

to Mr. J. G. Callander, Keeper of the National Museum of Scottish Antiquities, Edinburgh; to Dr. Adolf Mahr, Keeper, and Mr. L. S. Gógan, of the Department of Irish Antiquities in the National Museum, Dublin; to Mr. Arthur Deane, Keeper of the Municipal Museum, Belfast; to Mr. W. F. Grimes, of the National Museum of Wales; to Miss Russell, Curator of the Pitt-Rivers Museum, Farnham, Dorset; and to the Directorates of the Museo Archeologico, Florence, and of the Berlin Antiquarium. To Mr. D. B. Harden, M.A., Assistant Keeper of the Department of Antiquities in the Ashmolean Museum, I owe an especial debt of gratitude for the valuable and careful notes which he kindly made for me in the Dublin Museum at a time when it was impossible for me personally to visit that institution.

To the Trustees of the British Museum I am indebted for permission to reproduce the photograph of the Battersea cauldron, and to the Council of the Society of Antiquaries of Scotland for the use of figure 8.

The careful drawings of details and comparative material have been made under my direction by Miss Miréio Legge, M.A.

Since this paper was presented to the Society, the Ramelton cauldron (Schedule I, no. 9, belonging to Class A) has been published by Dr. Adolf Mahr in a paper on 'Recent acquisitions of archaeological finds by the National Museum, Dublin' (*Journal R. Soc. Ant., Ireland*, lx, 76, pl. II, fig. 2). Dr. Mahr there assigns it to the Early Iron Age, but, though this is by no means an impossible date for this as for others of the cauldrons which form the subject of my paper, there would appear to be little evidence at present to support this view of its age. It is of course arguable that deposits of weapons or implements made of an obsolete metal can have been stored in a vessel of a later date than their own. But to my knowledge even in England, where the Iron Age began, according to modern estimates, about 500 B. C., no object found with a cauldron is unmistakably of an Iron Age type, although the hoard may have been collected after the close of the Bronze Age. In Ireland, where the beginning of the Iron Age can scarcely be placed earlier than 200 B. C., the most that can be assumed is that the patched cauldron in the Dowris hoard was a worn receptacle stored with trumpets and other objects possibly, but not necessarily, later in date. Even if as late as 500 B. C., the Capecastle Bog bucket would still belong to the Irish Bronze Age.

In the recently published Heft 7 of 'Vorgeschichtliche Forschungen' entitled *Zur Handelsgeschichte der Germanischen Bronzezeit* Ernst Sprockhoff deals at length with examples of imported and derived bronze vessels such as cauldrons, buckets, and the like. It is an interesting commentary on the British

material that he figures no cauldron in any sense resembling the British specimens, and that all the buckets of the situla form from northern Europe either have horizontal handles riveted to the middle of the body of the vessel or the more usual pail-handle.

The statement, however, made in note 5 on page 134, that the ring-handles of the British buckets are held by broad bands of sheet-metal (*durch breite Blechbänder gehalten*) comparable with examples from Hallstatt (von Sacken, pl. xx, 2) and Italy, is, of course, quite erroneous. There is only one exception to the general rule of casting in the British Isles, and that is the bucket from Capecastle Bog. Even here, as already noted, the riveted staple is set in the position adopted on the British buckets, so that the ring falls inwards. The staple of the Hallstatt bucket cited by Sprockhoff resembles that of the Vetulonia situla figured above, save that it is a separate element riveted on, not an extension from the actual rim itself.

SCHEDULE I

CAULDRONS

No.	Locality. Class A.	H.	D.	Circ.	Remarks.	Where preserved.	Literature.
1	ENGLAND. R. Cherwell, Ship- ton-on-Cherwell, Oxon.	18	24	63½		Ashmolean Museum, Oxford [1928. 324].	
2	SCOTLAND. Dulduff, Kilkerran, Ayrshire, 1846.	—	—	—	Two staples, rings, a fragment of cauldron with hoard of bronze implements.	National Museum of Scottish Antiqui- ties, Edinburgh.	Cat. Nat. Mus. Ant. Scot., 1892, DQ 97-8; Proc. Soc. Ant. Scot., xxii, 39; J. Anderson, Scotland in Pagan Times, Bronze and Stone, 153; J. Evans, A.B.I., 410; Arch., lxi, 150. ¹
3	Hattenknowe, Ed- leston, Peebles- shire, 1903.	15½	—	61⅔	Ring of lozenge sec- tion; transverse stria- tions on rim.	National Museum of Scottish Antiqui- ties, Edinburgh.	Proc. Soc. Ant. Scot., xxxix, 14, fig. 1; Cat. Nat. Mus. Ant. Scot., DU 8.
4	(Scotland ?). DU 4.	—	—	—	Staple and ring.	National Museum of Scottish Antiqui- ties, Edinburgh.	Cat. Nat. Mus. Ant. Scot., 1892, DU. 4; Daniel Wilson, Prehistoric Annals of Scotland, 2nd ed., 349; right hand fig. on p. 350. ²
5	IRELAND. (Ireland ?) W 14.	—	—	—	Found with socketed bronze spear-head.	National Museum, Dublin [W. 14].	Wilde, Cat. of Royal Irish Academy, 531, No. 14; Journ. R. Soc. Ant. Ireland, liv, 113, fig. 9.
6	Portglenone, co. Derry.	c. 15½	18½	—	From a peat-bog; much patched.	Municipal Gallery and Museum, Bel- fast. Grainger Col- lection (3983).	Belfast Municipal Art Gallery and Museum; Quarterly Notes, no. L, p. 10, and fig. on p. 11.
7	Portglenone, co. Derry.	11½	15½	49		Ashmolean Museum, Oxford [1924. 932].	Sotheby's; W. J. Knowles Sale, 17th-20th Nov. 1924. Lot 674, pl. v.
8	Tul-na-Cross, Derry, 1880.	—	—	—	Locality given as Ful- na-Cross (J.R.S.A.I., liv, 113). Found in a bog. Badly damaged.	National Museum, Dublin.	Journ. R. Soc. Ant. Ireland, liv, 113.

¹ Nos. 138 and 139 in *Archæologia*, lxi, 150, refer to the same find.

² Wilson in the text, p. 349, mentioning the staple from Dulduff, refers to this figure, but the Dulduff staple has five ribs, while the figure shows only three.

A BRONZE CAULDRON FROM

32

No.	Locality.	H.	D.	Circ.	Remarks.	Where preserved.	Literature.
9	Nr. Ramelton, co. Donegal.	—	—	—	—	National Museum, Dublin.	Journ. R. Soc. Ant. Ireland, ix, 76, pl. ii, fig. 2.
10	Cloonascarragh Bog, Tuam, co. Galway.	—	—	—	The site is sometimes called Barnacurragh Bog.	National Museum, Dublin (Lent by Dr. T. B. Costello).	Journ. Galway Arch. and Hist. Soc., xi, 72; Journ. R. Soc. Ant. Ireland, liv, 113; plate opp. p. 110.
11	Dowris, Whigsborough, co. Offaly.	14	22	—	The site of discovery is called Derrens, but seems formerly to have been known as Dubhros (corrupted? to Dowris). Found with large hoard of implements, weapons, crotals, and trumpets.	National Museum, Dublin (Lent by the Trustees of the Earl of Rosse).	Proc. R. Irish Academy, xxxvi, 135, fig. 1; Journ. R. Soc. Ant. Ireland, liv, 10, fig. 5; J. Evans, A.B.I., 411; Arch., lxi, 153-4; Sir W. R. Wilde, Cat. R. Irish Academy, 530.
12	Derreen, Kilcorkey, co. Roscommon.	—	—	—	Rings of $\diamond$ section.	National Museum, Dublin [283, 1905].	
13	[Ireland?]	—	—	—	Rings of $\circ$ section.	National Museum, Dublin.	
14	[Ireland]	14	19	—	—	Municipal Art Gallery and Museum, Belfast [1911, 142].	
15	[Ireland] ¹	—	—	—	Triple-ribbed staple and ring of $\circ$ section.	National Museum, Dublin.	Sotheby's; W. J. Knowles Sale, 17th-20th Nov. 1924. Lot 675.
16	Class B 1. SCOTLAND. West of Scotland.	14	25	—	Exterior and internal stays; conical rivets; rings worked down to $\diamond$ section by filing.	National Museum of Scottish Antiquities, Edinburgh (Leckie Collection).	Proc. Soc. Ant. Scotland, xix, 313, fig. 3; xxxix, 17, fig. 3; Cat. Nat. Mus. Ant. Scot., 1892, DU 2; J. Anderson, <i>op. cit.</i> , 207, fig. 225.
17	WALES. Llyn Fawr, Rhigos, Glamorgan, 1911.	14	—	—	Fluted rings; external stays; bossed rivets.	National Museum of Wales, Cardiff.	Archaeologia, lxxi, 136, pl. xii, 1.
18	IRELAND. [Ireland?] W 12.	12	21	67	Fluted rings; internal stays; conical rivets.	National Museum, Dublin.	Sir W. R. Wilde, Cat. R. Irish Academy, 529, fig. 407; Journ. R. Soc. Ant. Ireland, liv, 111; J. Evans, A.B.I., 410, fig. 511.
19	[Ireland?] W 13.	—	—	—	Staple, set on top of narrow sloping brim,	National Museum, Dublin.	Sir W. R. Wilde, Cat. R. Irish Academy, 531, fig. 408, No. 13.

¹ It is possible that some of the large rings found in Ireland originally belonged to cauldrons (or buckets). As examples there may be cited: Glensial, co. Limerick—ring of O-section, in a small hoard (Proc. R. Irish Academy, xxxvi, 146, fig. 10) and Brockagh, co. Westmeath—two rings (*ibid.*, 144, fig. 7, nos. 17 and 22).

20	Dirneveagh Bog, Ballymena, co. Antrim, 1885.	12	20	—	Rings missing; patched.	Municipal Art Gal- lery and Museum, Belfast [1925, 279].	Sotheby's; W. J. Knowles Sale, 17th-20th Nov. 1924. Lot 679.
21	Derry Bog, Car- berry Castle, co. Cork.	—	—	—	Internal twisted stays; conical rivets.	Earl of Bandon.	Descriptive Cat. British Association, Belfast, 1852, p. 48; Proc. Soc. Ant. London, xxii, fig. 7 (opp. p. 128); Ulster Journ. Arch., v, 84; Wilde, <i>op. cit.</i> , 530, note; Journ. R. Soc. Ant. Ireland, liv, 112.
22	Ballyshannon, c o. Donegal.	c. 13	c. 21	—	Fluted rings, external and internal stays; conical rivets.	National Museum, Dublin.	Journ. R. Soc. Ant. Ireland, liv, 4, pl. i.
23	Donaghadee, co. Down.	—	(of mouth) 24	—	'Much broken'; fluted rings; fretted exter- nal supports; bossed rivets. Found 5 ft. deep in a bog.	Municipal Art Gal- lery and Museum, Belfast [1911, 140].	Descriptive Cat. British Associa- tion, Belfast, 1852, p. 48; Journ. R. Soc. Ant. Ireland, liv, 113.
24	Raffery Bog, Kil- linchy, co. Down.	14	22	—	Corrugated brim; coni- cal rivets; external and internal stays.	Marchioness Dufferin and Ava.	Ulster Journ. Arch., v, 82, coloured plate; Journ. R. Soc. Ant. Ire- land, liv, 111; Proc. Soc. Ant. xxii, fig. 7 (opp. p. 128).
25	co. Down ? ¹	—	—	—	Photograph in posses- sion of Royal Irish Academy.	Marchioness Dufferin and Ava.	Journ. R. Soc. Ant. Ireland, liv, 113.
26	Milkernagh Bog, Granard, co. Longford, 1884.	13½	19	57	Found 12 ft. deep un- der turf. External and internal twisted stays; conical rivets.	National Museum, Dublin.	Journ. R. Soc. Ant. Ireland, xxix, 256, with two figs.; <i>ibid.</i> , liv, 110.
27	Lisdromturk Bog, Farney, co. Mo- naghan, 1834.	11½	—	60	Found 12 ft. deep in bog; conical rivets.	Private.	E. P. Shirley, Some Account of the Territory or Dominion of Farney (1845), 185 and figs.; Arch. Journ. iii, 96; J. Evans, A.B.I., 409; Journ. R. Soc. Ant. Ireland, liv, 112, fig. 8; Cat. British Assoc., Belfast, 1852, p. 48; Ulster Journ. Arch., v, 84.

¹ No. 25 may be identical with No. 24.

A BRONZE CAULDRON FROM

No.	Locality.	H.	D.	Circ.	Remarks.	Where Preserved.	Literature.
28	North Ireland.	—	—	—	Ring only; hollow casting; slightly fluted.	Ashmolean Museum, Oxford [1886, 5812] (Antrim Collection).	Information from Mr. L. Gógan.
29	Castlederg, co. Tyrone.	—	—	—	Conical rivets.	Major-General H. M. de F. Montgomery, Blessington, co. Tyrone.	
30	Dowris, Whigsborough, co. Offaly.	—	—	—	Staple with fragment of cauldron; the roll of the rim filled with lead.	British Museum (Cooke Collection). ¹	Proc. R. Irish Academy, iv, 425 (no. 1).
31	Dowris, Whigsborough?	—	—	—	Piece of rim with embossed dots.	British Museum (Cooke Collection, 54, 7-14, 357).	
32	Class B 2. ENGLAND. R. Thames, Battersea, London.	16	22½	—	Openwork external stays, bossed rivets; rings of T-section.	British Museum.	British Museum Guide to the Antiquities of the Bronze Age, 2nd ed., 55. pl. v, fig. 1; J. Evans, A.B.I., 411; V.C.H., Surrey, i, 243.
33	Ipswich, Suffolk.	—	—	—	Pair of staples and rings, with fragment of cauldron; ring of T-shaped section.	British Museum.	J. Evans, A.B.I., 411; V. C. H. Suffolk, I, 276.
34	SCOTLAND. Poolewe, Ross-shire, 1877.	—	—	—	Ring and staple; ring of T-shaped section; in hoard of bronze.	Private. ²	Proc. Soc. Ant. Scotland, xiv, 45; J. Anderson, <i>op. cit.</i> , 162; Arch., lxi, 153.
35	IRELAND. Ballyscullion, co. Antrim, 1880.	16	24	—	Eight exterior struts; ring of elaborate section, T-shaped in character.	Pitt-Rivers Museum, Farnham, Dorset.	J. Evans, A.B.I., 411; Sotheby, Nov. 3, 1890. Lot 46.
36	[Ireland]	—	—	—	Pair of rings and staples with fragments of cauldron.	National Museum of Scottish Antiquities, Edinburgh (Bell Collection).	Cat. Nat. Mus. Ant. Scot., 1892, p. 158, DV 2-3.
37	[Ireland]	—	—	—	Pair of rings and staples.	National Museum, Dublin.	Sotheby's; W. J. Knowles sale, 17th-20th Nov. 1924. Lot 673. pl. v.

¹ This was fastened after discovery to the bucket (Brit. Museum Guide Bronze Age, 2nd ed., pl. v, 2 and Schedule II, no. 9 *infra*) with copper wire, evidently as a result of a passage in the original account (*loc. cit.* p. 425) which reads, 'This vessel had handles to it, but they were broken off by the persons who found it. Part of one of the handles is now in it.' It obviously has no other connexion with it.

² One object from the hoard, a penannular bronze ring with trumpet-shaped ends, is in the National Museum of Antiquities of Scotland (DQ. 20).

THE RIVER CHERWELL, OXFORDSHIRE

35

BUCKETS

No.	Locality.	H.	D.	Circ.	Remarks.	Where preserved.	Literature.
1	ENGLAND. Meidreth, Cam- bridgeshire.	—	—	—	Ring and 5-ribbed sta- ple with fragment of bucket; with hoard.	British Museum.	J. Evans, A.B.I., 411, 466; Brit. Mus. Bronze Age Guide (2nd ed.), 45.
2	Heathery Burn cave, Durham, 1873.	17½	16	—	5-ribbed staple; wheel- shaped plate on base.	British Museum.	Brit. Museum Bronze Age Guide (2nd ed.), 46; J. Evans, A.B.I., 412; Arch., liv, 95-6.
3	Matching Barnes, Hatfield Broad Oak, Essex, 1893.	—	—	—	Two rings and staples, one with 5 ribs, the other with 6, with fragments of vessel; twisted wire in rim; plates from base; found with hoard.	Colchester Museum.	Trans. Essex Arch. Soc., vi, 172; V.C.H. Essex, i, 266, figs. 28, 29, 32 and 33.
4	SCOTLAND. Cardross, Dum- bartonshire.	19	16	—	Wheel-shaped plate on base.	H. D. Erskine, Esq., Cardross.	Proc. Soc. Ant. Scot., xxii, 36, fig. 1.
5	Duddingston Loch, Edinburgh, 1780.	—	—	—	Ring and 3-ribbed sta- ple with hoard of broken swords and spear-heads.	National Museum of Scottish Antiqui- ties, Edinburgh.	J. Anderson, <i>op. cit.</i> , 142; Cat. Nat. Mus. Ant. Scot., DQ 1; Proc. Soc. Ant. Scotland, i, 132; Arch. lxi, 150-1, fig. 189; D. Wilson, <i>op. cit.</i> , i, 349, left-hand fig. on p. 350; J. Evans, A.B.I., 409, 465.
6	IRELAND. Cape Castle Bog, Armo, co. An- trim.	17½	15½	—	Wheel-shaped plate on base; embossed dot- ted decoration at shoulder.	Pitt-Rivers Museum, Farnham, Dorset.	J. Evans, A.B.I., 413, fig. 513; Sotheby's; T. W. U. Robinson sale, 3rd-4th Nov. 1890. Lot 183; Proc. R. Irish Acad., xxii, 324; Journ. R. Soc. Ant. Ireland, liv, 110.
7	Dervock, co. An- trim.	16	(at mouth) 14½	—		Belfast Municipal Art Gallery and Mu- seum [1911, 141].	Belfast Municipal Art Gallery and Museum, Quarterly Notes, No. L, 10, and fig. on p. 11. Proc. Soc. Ant. London, xxii, 128, fig. 7; Journ. R. Soc. Ant. Ireland, liv, 110.
8	Derrymacash, co. Armagh.	13½	12¾	—	Four ribs on staple; six angle-plates on base, with ribbed decoration.	National Museum, Dublin [114, 1898].	Journ. R. Soc. Ant. Ireland, liv, 110, fig. 7.

A BRONZE CAULDRON

No.	Locality.	H.	D.	Circ.	Remarks.	Where preserved.	Literature.
9	Dowris, Whigsborough, Offaly, 1830.	16	—	—	Seven angle-plates with concentrically ribbed disks at middle, on base; ring-handles and staples missing.	British Museum	J. Evans, A.B.I., 412; Brit. Museum Bronze Age Guide (2nd ed.), 107, pl. v, 2; Journ. R. Soc. Ant. Ireland, liv, 10, fig. 1; ¹ Proc. R. Irish Acad., iv, 425; xxxvi, c. 138.
10	Dowris, Whigsborough, Offaly, 1830.	—	—	—	Portion of lower part of vessel, with (originally) eight angle-plates with longitudinally ribbed oblong plates at the middle.	British Museum (Cooke Collection, 54, 7-14, 314).	Proc. R. Irish Acad., iv, 425, No. 2; xxxvi, c. 138 (one of the 'pan-shaped vessels').
11	Dowris, Whigsborough, Offaly, 1830.	—	—	—	Two angle-plates with undecorated oblong plate at middle.	British Museum (Cooke Collection, 54, 7-14, 315).	Proc. R. Irish Acad., iv, 425, No. 2.
12	[Ireland]	18½	(at mouth) 15	—	Five ribs on staple; six angle-plates with cup-like discs at middle, on base.	National Museum, Dublin [W. 15].	Sir W. R. Wilde, Cat. Mus. R. Irish Acad., 531, fig. 409; Journ. R. Soc. Ant. Ireland, liv, 110.
13	[Ireland]	12¾	12¾	—	Three ribs on staple; extensively repaired.	National Museum, Dublin [57, 1901].	Proc. R. Irish Acad., xxii, 285, fig. 110. Journ. R. Soc. Ant. Ireland, liv, 110.
14	[Ireland]	—	—	—		Private, in Scotland (formerly in the possession of the Rev. W. F. Falkner, of Killucan, co. Westmeath).	Journ. R. Soc. Ant. Ireland, liv, 110.

¹ See Dowris under Class B 1.



The Aesica Brooch (†)

From a photograph by W. Parker Brewis, F.S.A., by permission of the Society of Antiquaries of Newcastle-upon-Tyne

II.—*Romano-Celtic Art in Northumbria.* By R. G. COLLINGWOOD, Esq.,
M.A., F.S.A.

Read 21st November 1929

IT is a commonplace that before the Romans conquered Britain, its inhabitants had reached a high level of achievement in decorative art, and that one result of the conquest was the destruction of this art and the imposition of an inartistic though materially comfortable culture. With this view I do not propose to quarrel; but in certain ways I think it may with advantage be qualified. My present concern is with one such qualification.

In the general decay of Celtic art which is supposed to have followed upon the Roman conquest, one exception stands out conspicuous. I do not refer to the objects produced by the Castor and other local potteries of Roman Britain. They include pretty and ingenious things, but it would be pedantic to call them works of art. I refer to the well-known series of brooches to which attention has been repeatedly called in this place and elsewhere. First and foremost there is what so great a *virtuoso* as Sir Arthur Evans has called the most fantastically beautiful creation that has come down to us from antiquity¹—the gilt brooch found in the guard-room at Great Chesters. The Aesica Brooch, as it is generally called, is not an isolated thing. It is, as it were, surrounded by a cloud of witnesses to the artistic competence of the people who produced it. At the moment I need only remind you of two classes of brooch, the so-called trumpet- or harp-brooches, and the S-shaped or dragonesque. The strange beauty which inspired a German archaeologist, when he found a perfectly ordinary specimen of British trumpet-brooch, to call it a product of Africa,² has never, I think, failed to impress any one who has studied these objects.

Of all these brooches, none, so far as we know, was made before the Roman conquest of Britain. That is universally admitted. But, it is said, they were made in the least Romanized parts of the country, the north, the west, and even in unconquered Caledonia, to which Sir Arthur Evans ascribes the Aesica Brooch. It is implied that they are the lineal successors of the pre-Roman Celtic art of Britain, enjoying a last afterglow in the regions as yet unpenetrated by Roman influence.

This is another of the things which require, not so much to be contra-

¹ *Archaeologia*, lv, 186.

² *Röm. Funde aus Heddernheim*, ii, 40.

dicted, as to be qualified. The Celtic affinities of this art seem to me to have been emphasized at the expense of its Roman affinities, which are in fact, I contend, no less real.

To begin with the Aesica Brooch (pl. xi). Sir Arthur Evans has called attention to the fact that its ornament is like the ornament on objects found in Scot-

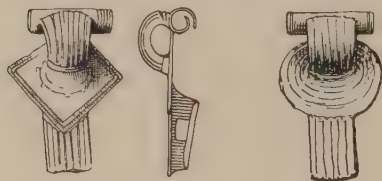


Fig. 1. Thistle-brooches. ($\frac{1}{2}$)

land, and is derived from the northern British style of pre-Roman art as we see it at Stanwick. But it does not seem to have been pointed out that the brooch itself, apart from its ornament, has nothing British about it whatever. Sir Arthur did certainly, in the original paper on this brooch to which I and every other student of the subject must

constantly turn with fresh gratitude and admiration, bring it into relation with the brooch worn by a lady on a Roman tombstone at Mainz. But when he wrote, hardly any brooches closely resembling the Aesica Brooch in shape were known. We now possess quite a large number of them, and, as will be shown below, their distribution does not suggest that the Aesica Brooch was a product of Caledonian art.

The Aesica Brooch, as Sir Arthur showed, is derived from the type which German antiquaries call the thistle-brooch (fig. 1). With its humped and reeded bow, its reeded tail like that of a bird, and the disc lying flat on the base of the tail and serving to anchor the foot of the bow to the body of the brooch, this is a remarkably individual and recognizable form; and its dating and distribution are now well established, though the evidence on which the dating is based has mostly come to hand since Sir Arthur's paper was written. It is very common at Roman sites of the early and middle first century in north-western Europe. At Mont Beuvray it appears with a pre-Roman date; but its associations in the Rhineland are not pre-Roman but definitely Roman, and belong to the first half of the first century. In this country it is rare; but when it does occur it is always at places which felt the influence of the Roman invasion at a very early date. Thus we find it at Canterbury, at Lincoln, at Richborough, at South Ferriby, a site remarkable for its large collection of early objects, at Hod Hill, and even in the native village at Cold Kitchen Hill, where a very curious selection of early Roman things has been found. I need not attempt a complete list, but I think it is beyond doubt that wherever we find thistle-brooches in Britain they represent an intrusion of Continental influence in the first years of the Roman occupation. Not a single example has been found which seems to have been in this country before the Romans came, and not a single example which seems to have been in use as late as the Flavian period.

The thistle-brooch, then, is a type which belongs not to Britain but to the Continent, and had already passed almost out of use by the time of the Roman conquest. From this type the Aesica Brooch is patently derived. When and where did this derivation take place?

To begin with the when. The Aesica Brooch is not a thistle-brooch, but a fan-tailed type differing from it, though in close relation to it (fig. 2). This

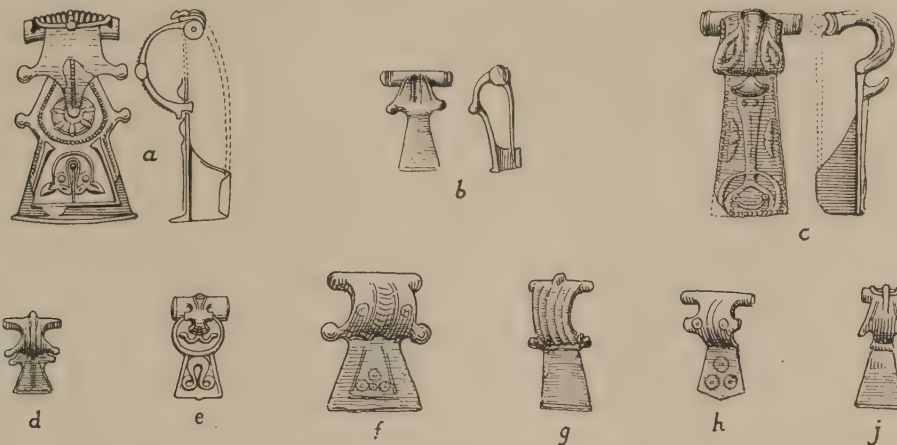


Fig. 2. Bow and fan-tail brooches ($\frac{1}{2}$): *a* (Hook Norton), *b* (South Cerney), *c* (Kent), *d* (Woodeaton), *e* (Wroxeter), (Camerton), *g* (Lydney), *h* (Camelon), *j* (Wroxeter).

fan-tailed type recurs at Hook Norton (*P. S. A.* xxiii, 407), at Wylze Camp and at Winterbourne Bassett (*W. A. M.* xxxv, 404), at Wroxeter (*Wr.* 1912, no. 3), at Woodeaton (*J. R. S.* vii, p. 114, no. 61), at Canterbury (*Ant. Journ.* iv, 153), at Camerton (*V. C. H. Som.* i, 293), at Lydney (Bledisloe collection), at Camelon in Scotland (*P. S. A. Scot.* xxxv, 403), at South Cerney and Grantchester (Evans Collection, Oxford), and at Santon Downham (*Camb. Arch. Soc.* xiii, 159). Of these examples, only one was found in a deposit of such a kind as to fix the date at which it was in use: namely the Wroxeter example, which dates probably from the early second century. The Canterbury example ought perhaps to be regarded as intermediate between this class and that to which the famous Birdlip brooch belongs.

Let us turn to the Mainz tombstone.¹ This is not itself a dated monument, but Zangemeister thought on epigraphic grounds that it probably belonged to the reign of Trajan. The brooch that appears on this monument is quite clearly not a thistle-brooch, but an example of the related Hook Norton type. As shown in Lindenschmit's plate, it has wings projecting outwards and downwards from the bow; and these wings, which occur at Hook Norton, Camerton, Lydney, South Cerney, Woodeaton, Wroxeter, Camelon, and indeed in almost

¹ Lindenschmit, *Allerthümer unserer heid. Vorzeit*, Band III, Heft ix, Taf. 3.

every one of the fan-tail specimens known to me, never appear in the thistle-brooch. Consequently the Mainz evidence of date, such as it is, tallies precisely with that of the Wroxeter example. We must infer that whereas the thistle-brooch belongs to the period from, say, 50 B.C. to about A.D. 50, the fan-tailed type is a derivative of it which flourished about A.D. 100.

The Aesica Brooch obviously belongs to the fan-tailed type. But it is so unusual and unprecedented a thing that we cannot easily say whether it falls early or late in the history of that type. In the development of any type once established, decadence is the general law of art; and so intensely vigorous a work as this, so far removed from anything like the weariness and formalism of a decadent school, can hardly be a late example of its kind. When the history of a type is drawing towards its close, the artist either dully repeats, without conviction and without fervour, patterns which have become mechanical; or else he feels uneasily that this is what he is about to do, and searches for something sensational to relieve the tedium that threatens to engulf him. The Aesica Brooch does neither of these things. Its curves are too energetic to be accused of the one, and too spontaneous, too pure in taste, to be suspected of the other. On stylistic grounds, the Aesica Brooch should be an example of the prototype of which the Wroxeter specimen is a degradation, and this would place the Aesica Brooch hardly later than the Flavian period.

This conclusion, however, is exposed to objection on more than one ground. In the first place, there is one feature about the brooch itself which connects it with a later period. This is the head-plate, the rectangular plate that intervenes between the cylindrical spring-case and the head-loop. This head-plate seems to be a development of the collar which embraces the neck of the head-loop in the ordinary trumpet-brooch; the collar is already beginning to outgrow all bounds in the Backworth brooches, which were found with coins of Antoninus Pius, and it has grown still larger, changing into this plate, both in the Aesica Brooch and in the trumpet-brooch that was found with it. Here, then, seems to be a reason for putting the Aesica Brooch appreciably later than the Backworth type, which belongs to the middle of the second century.

This is a difficulty which I do not wish to minimize. There does seem here to be a certain conflict between a stylistic dating, which would place the Aesica Brooch early in its class, and a typological dating, based on one detail, the head-plate, which would place it the best part of a century later. But at the same time it ought to be pointed out that typological dating has its perils, and that in the present case the perils are acute. The typologist is tempted to think that a more advanced case of a certain tendency must necessarily be later in date than a less advanced. But all he is really entitled to say is that the less advanced type must have begun to appear before the more advanced;

not that every example of the one antedates every example of the other. Now, the more examples we possess, the more nearly we are entitled to the conclusion that typology and chronology coincide; but when we only possess one or two cases of a tendency, the assumption that these can be arranged in a chronological order on purely typological grounds is very hazardous. But this type of exaggerated collar is a thing of which, if I am right, we possess only one example, namely the Backworth¹ (fig. 4, *d'*); and the fact that this pair of brooches was found with coins of the middle second century does not prove that it was not made a good deal earlier. The circumstances of the find are here important. The Backworth brooches were not found in an occupation-level, but in a hoard; and it is the nature of a hoard to be gradually accumulated. The Backworth brooches may have been made in the reign of Pius; but nothing entitles us to assert that they were not made in the reign of Hadrian, or even in that of Trajan. And even if they were made in the reign of Pius, their collar may, for all we know, have been the brother or even the nephew, and not necessarily the father, of the Aesica Brooch's headplate.

I venture then to believe that there is nothing in the typological argument that can warrant us in wholly rejecting the stylistic argument drawn from the comparison of the Aesica Brooch with the others of its class.

There is a second *prima facie* objection to dating the Aesica Brooch before the late second century. It was found 3 ft. above the original floor level, in a guard-room of the south gate at the fort of Great Chesters. The fort was, of course, built in the reign of Hadrian; and from all that we now know about the history of these forts, it is highly probable that the debris in which the brooch was found represents the destruction that took place about 197.² That, therefore, is the date at which the brooch was lost. Does not this amount to saying that it belongs to the late second century?

The answer is, once more, that the Aesica Brooch was not in use when it was lost, but hoarded. The evidence of the finders is clear on this point. The two brooches, when they were lost, had been lashed with string to a piece of board for safe keeping or transport (*Arch.* lv, 193). Their position 3 ft. above the floor level suggests that they had been kept in the room over the guard room, and had fallen with the floor of that room when the gate was burnt. In any case, they represent loot in the possession of a soldier, and the date at which he possessed them is not the date at which they were made. The more

¹ In a lesser degree it appears elsewhere, e.g. on a brooch (fig. 3 *d*) of the trumpet type, sub-group R (i), at Traprain Law (*P. S. A. Scot.*, 1915-16, p. 97, fig. 22, no. 1). This brooch might, for all I can see, belong to the late first century.

² Until 1929, it was usual to date this destruction *c.* 180 (Dio, lxxi, 7, § 1). Evidence found at Birdoswald in that year seems to demand moving its date to *c.* 197 (*ibid.*, lxxv, 5, § 4). See *Cumb. and West. A. and A. S. Trans.*, N.S., xxx, p. 200; *Arch. Aeliana*, ser. 4, vii, 164.

valuable such things are, the more carefully they are likely to be kept, and the more dangerous it is to assume that the date of their loss must have been soon after the date of their manufacture. On this ground also, then, there is no absolute reason to date the Aesica Brooch late in the second century.

To conclude this part of my inquiry. The evidence of all similar brooches would lead us to put the Aesica Brooch towards the end of the first century or not much later; but in the light of other facts it is not wise to insist on a very early date. I am disposed to compromise and to suggest that it be assigned to the first half of the second century.

Where, then, was this brooch made? Sir Arthur Evans suggested in Scotland, outside the limits of the Roman Empire. That may be right; but the reason he gave was its complete freedom from Roman influences. In the light of evidence that has come to hand since he wrote, I hardly think that this argument can now be maintained. The fan-tailed type to which the Aesica Brooch belongs is not a native type; it is developed from a Roman Continental pattern, the thistle-brooch, and in Britain is limited to the south, with only two exceptions—the Aesica Brooch itself, and the example at Camelon (a Roman fort, not a native site) near the Antonine Wall. The distribution of these fan-tailed brooches is exceedingly difficult to reconcile with the proposed Scottish origin of the Aesica specimen; for, even granting that this specimen stands by itself in many ways, and differs widely in details and in artistic power from the rest of its class, it does nevertheless recognizably fall into that class. Its form is not native but Roman, in the sense that it falls into a class characteristic of the more Romanized parts of Britain, and derived from a type imported into this country by the Romans themselves. It seems, for these reasons, more likely that the Aesica Brooch was made in a part of Britain which had been sufficiently touched by Roman influences to have adopted certain decorative motives from the conquerors, and yet remained sufficiently un-Romanized to convert these motives to uses very different from those for which they had been originally employed. In the sequel, we shall see that these conditions were fulfilled in the north of England and the south of Scotland, the land between Humber and Forth, in the first half of the second century. At no other time and in no other part were they ever fulfilled in Britain. To this region and this period, then, it seems that the making of the Aesica Brooch must be assigned.

In order to form a just estimate of the civilization to which I here ascribe the Aesica Brooch, it is necessary to examine certain other works of art assignable to the same region, and, this time, assignable with no possible margin of doubt. Of these, the most interesting are the trumpet-brooches. These can be classified according to two criteria, into four groups. In the first place, the

moulding at the waist may run all round the girth of the bow, or only round the front and sides. In the second place, this moulding may be either plain or enriched with an acanthus above and below. Thus we may distinguish four sub-groups based on these two variables. Sub-group R (i)¹ consists of brooches with a plain round moulding, R (ii) of those with a round acanthus moulding, R (iii) of those with a plain half-round moulding, and R (iv) of those with a half-round acanthus moulding. It has often been pointed out that the half-round moulding ought, by the rules of typology, to be later than the round moulding, and in a general way this is so; but it is one of those typological truths which are only half-truths in chronology. The round moulding in these British trumpet-brooches can be traced back to an earlier date than the earliest known half-round mouldings, but the half-round moulding existed earlier still on the Continent in brooches of a very similar type, and for the most part their history in Britain proceeds concurrently.

Typologically, too, the plain moulding should be earlier than the acanthus; but here again the two existed side by side, and the facts, so far as I can make them out, are not capable of being stated in any simple formula. We are all agreed that the trumpet-brooch is derived from the La Tène brooch of the so-called Aylesford type (*Archaeologia*, lv, 182; cf. *B. M. Early Iron Age Guide*, p. 96; Brewis, in *Archaeologia Aeliana*, ser. iii, xxi, 173, &c.). This has a plain waist-moulding, and there is no doubt that the acanthus was added at some point in the line of development leading from the Aylesford prototype to the fully-developed trumpet-brooch. Two typological steps seem to be distinguishable on this path. First, there is a type which roughly resembles the true trumpet-brooch, but has a straight cylindrical leg and a head bent very sharply over, giving its profile a clumsy and ugly appearance. This profile is like that of the Aylesford brooch, but heavier; and it is rather like a series of ugly little brooches which are the continental derivatives of the Aylesford type. Secondly, there is a group of brooches much resembling these, but differing from them in that their profile has acquired a graceful curve, obtained by giving the leg a convex or concave outline, and not bending the head over so sharply as before. This group is the immediate ancestor of the fully-developed trumpet-brooch, which differs from it only in adding an acanthus on either side of its central moulding.

These two classes of brooch, which I place together as sub-group R (i), (fig. 3), seem to provide the steps by which the Aylesford type develops into the trumpet type. What separates these two steps is the discovery that the ugly profile produced by a straight leg and sharply bent-over head can be greatly

¹ In using the letter R for the entire group of trumpet-brooches, I am anticipating the classification of brooches in a work on the *Archaeology of Roman Britain*, shortly to be published.

improved by thinking of the brooch as a single curve, somewhat pear-shaped in outline. When this variety has been reached, we are almost at the true trumpet-brooch; nothing is lacking except the acanthus.

Sub-group R (i), as a whole, is purely British, so far as I know, and the history of it seems to fall in the late first century A. D. The examples of it are by no means common; but when they are put together, they are seen to occur

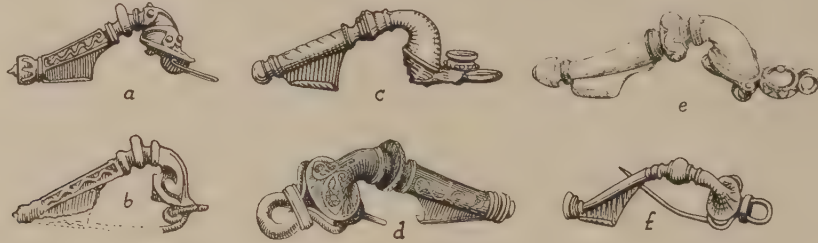


Fig. 3. Trumpet-brooches, R (i) ($\frac{1}{2}$): *a* (Segontium), *b* (Forden), *c* (Wroxeter), *d* (Traprain), 'stumpy' variety; *e* (Deepdale cave), *f* (Newstead I), 'graceful' variety.

at places where there was certainly or probably a Flavian occupation. Thus, we find one at Corbridge (*P.S.A.*, xxiii, 488), one at York (Yorkshire Museum, unpublished), one at Aldborough (Smith, *Rel. Isur.*, pl. xxv, fig. 9), one (fig. 3, *c*) at Wroxeter (*1912 Report*, no. 6, in a stratum of the middle second century, which does not exclude the possibility of its having been in use earlier than that), one (fig. 3, *a*) at Segontium (Wheeler, *Segontium*, fig. 54), of which there is an exact duplicate, from Wroxeter, in the Ashmolean Museum at Oxford (unpublished), one (fig. 3, *b*) at the Forden Gaer (*Arch. Cambr.*, lxxxiv, p. 112), one (fig. 3, *f*) at Newstead in the ditch of the early fort (Curle, *Rom. Frontier Post*, pl. lxxxv, fig. 8), and others at the native sites of Traprain Law (fig. 3, *d*), Deepdale Cave (two, fig. 3, *e*, and another), Bat House Cave, and King's Scar Cave. All the above sites either certainly or probably had an early Roman or pre-Roman occupation; and in at least one case, at Newstead, the brooch was definitely associated with a Flavian deposit. The presence of this type in so many native sites is noteworthy, as suggesting that the development of this pattern out of the Aylesford type was a native, rather than a Roman, development. As for the distribution, it is as a whole unmistakably northern in the sense that these brooches are absent from the south and south-east, the Romanized district, and found over an area extending from central Wales and Shropshire to the Scottish lowlands.

When we come to distinguish between the two varieties of this sub-group, the stumpy and the graceful, it appears immediately that the latter is a more emphatically northern type than the former. The only examples of it known to me are at York, Aldborough, Deepdale Cave, Corbridge, and Newstead. The

stumpy variety, on the other hand, is less common in this region, and extends, as we have seen, as far south as Wroxeter and Forden. It may be inferred that the problem of changing the stumpy profile into a graceful one with a single flowing curve was solved somewhere between the Humber and the Forth in the Flavian period.

Sub-group R (ii) (fig. 4) consists of this North British Flavian brooch, altered in one way only—by the addition of an acanthus on either side of the

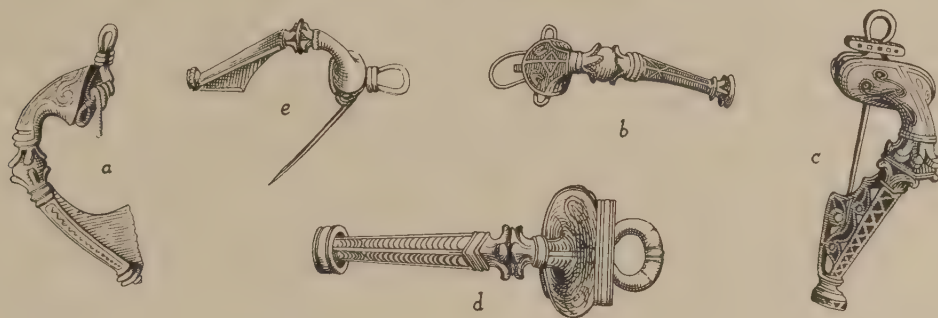


Fig. 4. Trumpet-brooches, R (ii) ($\frac{1}{2}$): *a* (Newstead), *b* (Bonsall), *c* (Risingham), enamelled; *d* (Backworth), engraved; *e* (Newstead), plain.

central moulding. This addition is a logical development of the previous change. First, the awkward division of the brooch into two parts, one exaggeratedly bent and the other rigidly straight, separated by a moulding in the middle which breaks the design in two, was overcome, and a single curve designed which passes unchecked through the central moulding. But this moulding still forms an uncomfortable break in the profile, and something is needed to connect it with the parts on either side of it. The aesthetic problem is identical with that of leading the eye from the shaft of a column to the abacus on the top of it. A middle term, connecting the longitudinal lines of the shaft with the cross-lines of the abacus, is found in Roman architecture by the use of various capitals, of which the most decorative consists essentially of an acanthus. The same decorative feature, introduced into the trumpet-brooch, completes its evolution, and it is now at last fully formed.

The date at which this last change took place cannot be exactly determined; but it certainly happened well before 140, and it probably did not happen before 100, perhaps not very much before 120. The *terminus ante quem* is given by the numerous examples of R (ii) found in Germany and convincingly interpreted as having been brought thither about A.D. 143; to these we shall return below. The *terminus post quem* is given by the fact that no brooches of this type have been found in the Trajanic forts in Wales, though imitations of it have (Wheeler, *The Roman Fort at Brecon*, fig. 58, nos. 1-6; it is

possible that no. 3 may be a genuine northern brooch); and this seems to indicate that during the reign of Trajan the fully-developed trumpet-brooch had already begun to be made in the north, but had not begun to be exported from its home except in insignificant quantities, while imitations of it were already being made elsewhere. It seems, therefore, that the addition of the acanthus took place during the first quarter of the second century. But it was certainly not until later than this that the northern workshops began exporting brooches of this type on a large scale.

I have called the decoration on the central moulding of these brooches an acanthus, for that is what, to me, it appears to be. The suggestion has been made (*B.M., Early Iron Age Guide*, p. 96) that it is a development of the hook or hooks which project from the waist of certain brooches often found on the Continent and not wholly absent from Britain. The Aylesford brooch has a single hook of this kind; a double hook is found on a brooch discovered between Ely and Peterborough (*Arch. Journ.*, v, p. 219). These were probably not made in Britain, but the waist-hook also appears on brooches of British manufacture, such as the famous Birdlip brooch, which is dated in the first half of the first century A.D. (*B.M. Guide, cit.*, p. 121), and one found in Kent and ascribed to about A.D. 100 (fig. 2j; *Ant. Journ.*, iv, 153). Another was found near Woodeaton with Flavian relics (*J. R. S.*, vii, p. 111, no. 51). These are the only cases that have come to my notice in which the waist-hook occurs on brooches certainly or almost certainly made in this country. Two of them are beautiful examples of Celtic art, the Birdlip brooch among the most beautiful in existence; and they prove that the waist-hook was in use in Britain at the time when the acanthus brooch was invented.

It does not follow that the acanthus is derived from the waist-hook. In the first place, the acanthus brooch certainly originated in the north, and the waist-hook, so far as we know, never occurs in the north. The southern cultural area in which we find the waist-hook did not, in the first and second centuries A.D., stand in any very close relation with the northern cultural area to which we trace the origin of the acanthus brooch; the fact that a certain motive appears in one of these districts does not prove that it was known in the other.

In the second place, if the acanthus developed out of the waist-hook there ought to be at least one intermediate phase traceable. There is no such phase. We know the history of the acanthus brooch to this extent, that we can point to examples of R (i) which are exactly like typical examples of R (ii) except that they lack the acanthus, and we can date them in the Flavian period. They show no trace whatever of the waist-hook. Nor can we point to any examples of R (ii) in which the acanthus shows signs of having been developed out of

a waist-hook. In a few cases the front leaf of the acanthus is exaggerated at the expense of the others into something slightly reminiscent of a waist-hook, but all these cases fall late in the history of R (ii), whereas if the acanthus developed out of the waist-hook they ought to fall early.

It is, no doubt, possible that the waist-hook had some influence on the development of the acanthus brooch. Such a development is always a highly complicated thing, and any new type shows, as it were, Mendelian factors inherited from very various and very remote ancestors. If no earlier Celtic artist had ever enriched the waist of a brooch with a hook, very likely the idea of enriching it with an acanthus would not have occurred to a later one. But, on the evidence before us, it is not legitimate to describe the acanthus pattern on the northern British brooches as a 'development' of the waist-hook.

It can, I think, hardly be doubted that the acanthus was borrowed by the northern brooch-makers from Roman architecture. In the south of England the Romans were putting up large stone buildings in the Flavian period; and acanthus capitals could no doubt be seen at Silchester or Cirencester before the end of the first century. But it was not in that part of Britain that the trumpet-brooch was invented. In the north, on the other hand, the Flavian forts had, so far as we know, no stone buildings, and it is not likely that they contained any examples of the acanthus pattern. But about the end of the first century and the beginning of the second—about the time when, as we have already seen, the fully-developed trumpet-brooch was about to come into existence—stone forts like Gellygaer and Hardknot were beginning to be built, and earth forts were in many places being reconstructed in stone. That this movement affected the north of England is abundantly proved. For our purposes, the most interesting of many examples is the legionary fortress at York, whose rebuilding in stone during 'the first decade or two of the second century' is well established (*J.R.S.*, xv, 192; xviii, 78). These new stone buildings must have brought the acanthus capital into northern Britain, and it was shortly after their erection that we find the northern workshops first producing brooches in which this motive was used. It is hardly too much to infer that the native craftsmen had learnt from the Romans a pattern which solved the decorative problem with which at the moment they were struggling, the problem of making the trumpet-brooch into a thing whose lines should flow gracefully into each other throughout its length.

The trumpet-brooch, like the fan-tailed Aesica brooch, is thus no product of the unaided British imagination, but the fruit of a union between imported Roman ideas and native British workmanship. It arose, no doubt, in the less Romanized part of Britain; but it arose only after the Roman conquest of that region, and only as a result of the stimulus given by classical art, even in a

debased and mechanical form, to the British artist's mind. It is a commonplace that what we call Celtic art as a whole had a similar pedigree. It was derived from Greek patterns which reached the Celts of central Europe in the sixth, fifth, and fourth centuries B. C., and were transformed by them into the familiar trumpet and scroll motives of Celtic decoration. If this happened once, why should it not have happened again? The Roman acanthus is no doubt a smaller thing than the Greek palmette, but so is the Romano-British trumpet-brooch a smaller thing than the entire range of Celtic art in central and north-western Europe. In all essentials the two cases seem to be parallel. In neither is it just to give the Celtic mind credit for inventing its decorative motives unaided. In both cases it was the impact of a fully-formed and confident classical art that stimulated the Celtic imagination to its highest flights, flights which, if the Celtic mind could never have achieved them without such aid, a less gifted race could not have achieved even with the stimulus of Greco-Roman art to help it.

We must turn to the other sub-groups of the trumpet type. Group R (iii) (fig. 5) has a plain moulding like that of group R (i), but it only goes round the front and sides of the bow, the back being left plain. This type never appears, so far as I have been able to find, in the north of England or in Scotland, though it is common in the south and occurs as far north as the midlands and Wales. It has no one origin, but is derived from various sources. First (fig. 5, *a-c*), it is connected with a type found on the Continent in the first century A. D., and known as Hofheim type I. Actual examples of the Hofheim type are not found in Britain, but its influence seems to be present in certain south-country brooches. Secondly (fig. 5, *d*), this sub-group is in part a descendant of R (i), simplified and cheapened by interrupting the mouldings where they become invisible from the front. Thirdly, it is sometimes (fig. 5, *e-h*) a cheap south-country imitation of R (ii), with the acanthus left out and the mouldings simplified as before. Until these various alternative derivations have been distinguished it is unwise to offer any opinion about its chronology. Examples derived from the Hofheim type might belong to the middle of the first century; examples derived by simplification from R (i) might be late first or early second century; examples derived from R (ii) by simplification cannot be earlier than the early second century and are probably later than that.

As we go farther south, the imitations of northern trumpet-brooches falling into this class (cf. fig. 6, for southern imitations of R (ii), as well as fig. 5, *e-h*) tend to become not less recognizable for what they are, but more tasteless, unintelligent, and technically poor. In many cases (e. g. *Rotherley*, pl. xcix, no. 1; *Wilsford Down*, two examples at *Devizes Museum*, nos. 325, 326; *Hambleton*, in *Archaeologia*, lxxi, fig. 27) faint traces of the acanthus are present in the

form of a milled knob or a pair of tiny lumps, and the animal-head which in the northern brooches is often done in enamel or relief on the trumpet has been degraded into a few meaningless markings. These imitations may in some

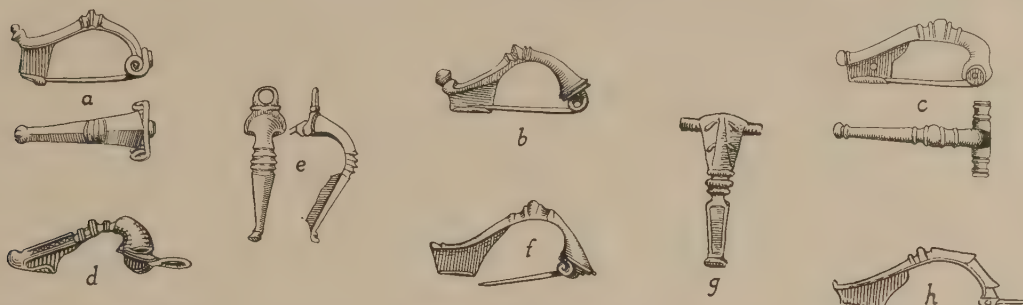


Fig. 5. Trumpet-brooches, R (iii) ($\frac{1}{2}$): *a, b, c* (Reading), continental types; *d* (Wroxeter, A.D. 110-30), derived from R (i); *e* (Segontium), probably derived from R (ii); *f* (Wroxeter), derived from R (ii); *g* (Wilsford Down), *h* (Lowbury), southern derivatives of R (ii).

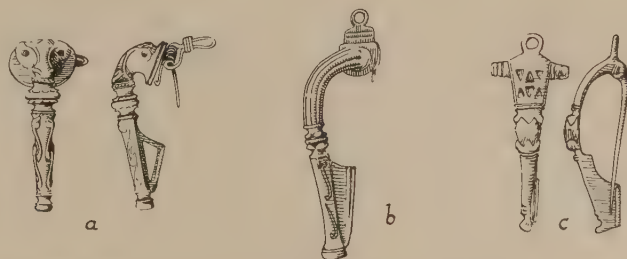


Fig. 6. Southern English imitations of R (ii) ($\frac{1}{2}$): *a* (Cirencester), a typical example of R (i), cf. fig. 1 *a, b*, modified by the addition of an acanthus; similar examples Lydney, Beckhampton Down; *b* (Poltross Burn), an import from the south; similar examples Charterhouse-on-Mendip, Canterbury, and other less close parallels in the south; *c* (Wootton-under-Edge), a very degraded imitation of a type common in the south-west, the trumpet-brooch assimilated to a well-known southern type.

cases be earlier, but most of them are probably later, than the time in the middle of the century (as I suppose it to be, because of the negative evidence of the Welsh forts evacuated about that time) when the northern workshops increased their production and sent their products all over England, as is shown by examples from Mildenhall (Fox, *Arch. of the Cambridge Region*, pl. xxii), West Stow in Suffolk (Evans Collection), London (Roach Smith, *Illustrations of Roman London*, pl. xxxiii, no. 16) or Tarrant Abbey in Dorset (*Durden Collection*, pl. vii, no. 2), to name a few only. That these southern examples were made in the south no one will believe who considers, first, the enormously larger numbers of the same type found in the north, and, secondly, the exact resemblance between the northern and southern specimens.

Group R (iv), with the half-round acanthus moulding, is fairly common in the north and not rare in the south. Some of the southern specimens (e.g. *Devizes Mus. Cat.*, no. 762, and *W. A. M.*, xliii, p. 180, both from Cold Kitchen

Hill; *Lowbury*, no. 52; *Durden Collection*, pl. vii, no. 3) are obviously of southern manufacture, and probably not earlier than the second half of the second century. In the north, too, this group is inclined to be late, although a fine enamelled specimen from Brough-under-Stainmore, in the Evans Collection, seems to me earlier than 150. It is worth noting that the trumpet-brooches

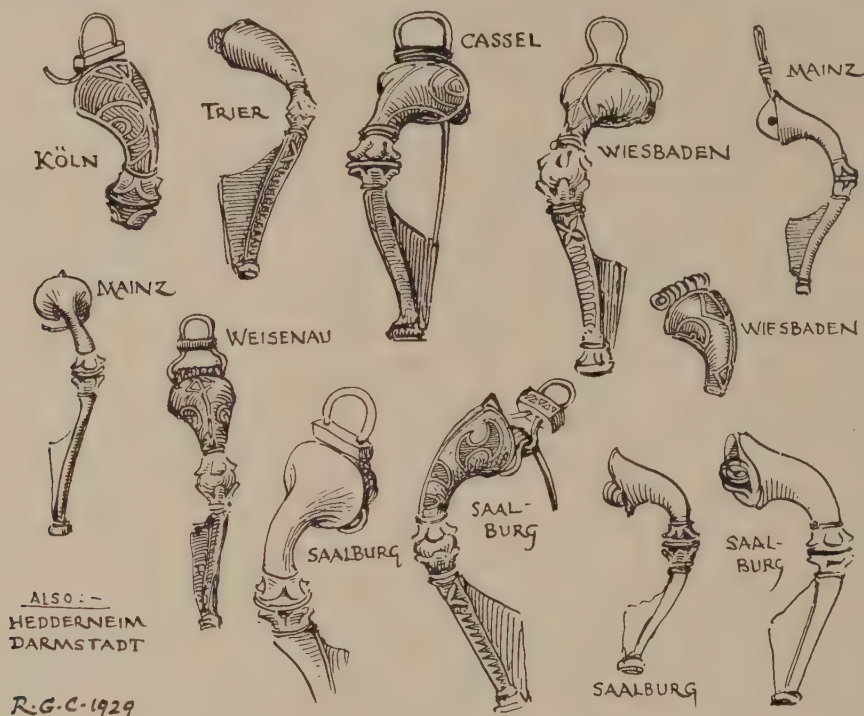


Fig. 7. Rough sketches of trumpet-brooches found in Germany; not local.

found in Germany, to which attention has been called by Dr. Jacobi in *Saalburg-Fahrbusch*, 1912, p. 19, have been connected by him with Professor Fabricius's view (expressed in 'Ein Limesproblem', *Festschrift d. Univ. Freiburg*, 1902) that about the year 143 a large number of Britons were removed from this country as a result of the conquest of the Lowlands by Lollius Urbicus and settled in the frontier district of Upper Germany, where they were employed in constructing the so-called 'outer Limes'. My own examination of the trumpet-brooches in Germany (figs. 7, 8; they have never been published as a group) entirely confirms this suggestion. The brooches in question, so far as I have been able to examine them, are remarkably homogeneous in type, and include nothing which I should ascribe to central or southern England. From the point of view of the student of British brooches they are inexplicable except as representing a sudden movement of people from the north of England

and the south of Scotland; a movement which took place at one time, about the middle of the second century, and was not repeated. To connect this movement with Antoninus Pius and the Brittones of the Odenwald Limes is a step which no one could refuse to take.

It follows that the German examples represent the state of the north British industry about A. D. 140. They include, so far as my observations go, only two examples of R (iv)—one at Heddernheim (fig. 8) and one at Mainz (fig. 7). It is also noteworthy that they include far more enamelled than plain specimens. The inference is that R (iv) did not become common until definitely after 140, and that the enamelled specimens of R (ii) are on the whole earlier than the plain. This confirms the suggestion, made above, that the time when the northern workshops began the 'mass-production' of cheap brooches, to meet a growing demand at a distance, was about the middle of the second century.

A very large and very ugly example of R (iv) (fig. 9) was found with the Aesica brooch, and shows some instructive features. The treatment of the acanthus, and indeed the whole design, betrays an over-ripe school of art and shows that the trumpet-brooch has been in existence long enough for people to aim at getting new effects by a sensational exaggeration of its features and an insistence on sheer size. The purchaser was no doubt induced to buy it by being told that it was the largest brooch in the world. The whole style is foreign to that of the German examples, and therefore

points to a date definitely later than 140. On stylistic evidence, no more than that can be said. At any time about 150-175 some one might have indulged in an orgy of bad taste with this kind of result. As to its place of origin, a flawed and unfinished casting of a similar brooch, found at Brough-under-Stainmore, is in the Ashmolean Museum (fig. 10). This is the only close parallel, though certain features—notably the exaggerated tray-like head-plate—reappear in a brooch from Cranborne Chase (*Woodcuts*, pl. xiii, no. 10); and it is not unlikely that the Aesica trumpet-brooch was made at or near Brough.

If we try to reconstruct the history of the industry after about 140, we soon find ourselves in difficulties. The next stage after that date, as we have



Fig. 8. Brooch from Heddernheim. ($\frac{1}{2}$)

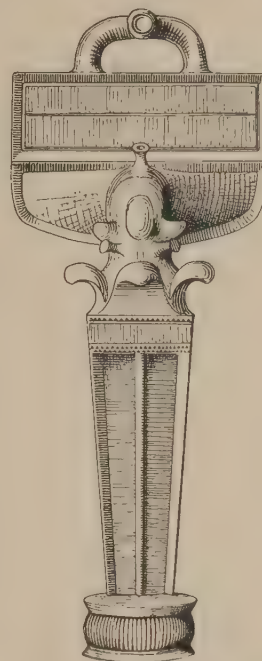


Fig. 9. Trumpet-brooch from Aesica. ($\frac{1}{2}$)

already seen, is the introduction of cheaper forms and the supplying of a wider market, which seems (since the forms change very little) to have happened quite soon. It probably happened about 150. But what happened next? It is hard to say. We are wholly unable to trace any stages by which the northern

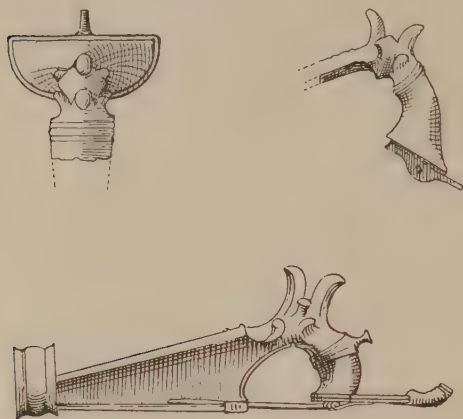


Fig. 10. Above: flawed casting from Brough-under-Stainmore ($\frac{2}{3}$). Below: trumpet-brooch from Aesica. ($\frac{1}{2}$)

workshops developed or decayed after that time. There are no decadent trumpet-brooches that can be ascribed to the north. The one exception known to me is an exception that proves the rule. This is a really dreadful brooch (fig. 6, *b*) which was lost in the Poltross Burn milecastle before A. D. 197 (*C. & W. Trans.*, N. S. xi, fig. 20, facing p. 440, no. 2). This would point to a catastrophic decline in the art of the northern brooch-makers, but for the fact that others just like it have been found at Charterhouse-on-Mendip (*V. C. H. Som.*, i, 338) and Canterbury (*Collect. Ant.*, vii, pl. xx); and these prove what any one looking at it would suspect, that it is not a northern brooch at all but one of the numerous and, in general, easily recognizable southern imitations. These are, as a rule, confined to the south. I know of no other example found in the north. One is tempted to conjecture that it was brought from the south by a soldier or camp-follower of the Second Legion, when detachments were moved up from Caerleon to garrison Hadrian's Wall while its own auxiliary regiments were on the Antonine Wall between 143 and 197.

There is no evidence that any trumpet-brooches were made in any northern workshops after the end of the second century; and the total lack of developments or debasements referable to the second half of the century (the Aesica trumpet-brooch being rather a freak than either a development or a regular debasement) suggests that the production of this type ceased a good deal before 200—nearer, perhaps, to the middle of the century than to the end. On the whole, the *floruit* of the acanthus brooch, R (ii) and R (iv), seems to have lasted forty or fifty years, from A. D. 110–120 to A. D. 160–170. This dating is, of course, very rough.

A third group belonging to the same time and place consists of brooches shaped like the letter S (fig. 11). These S-shaped or 'dragonesque' brooches have been hardly less admired than the trumpet-brooches; and though they are not in fact so beautiful as these, they are a very fine example of Celtic decorative art. They were not originally dragonesque; that, like the animal-

head on the trumpet-brooches, was an addition to the original design in keeping with the general spirit of Celtic art, which liked to turn things into beasts whenever opportunity offered.

The earliest form of S-shaped brooch is seen in a little example from Braughing in the Ashmolean Museum (fig. 11, *a*). It is associated with several

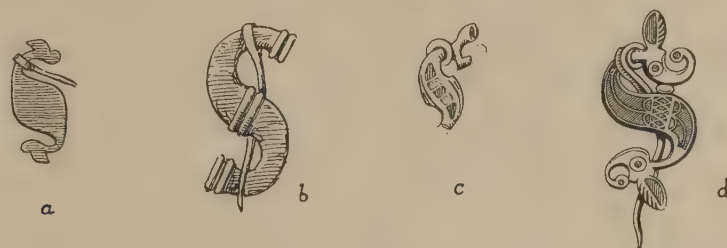


Fig. 11. S-shaped brooches ($\frac{1}{2}$): *a* (Braughing); *b* (Victoria Cave); *c* (Segontium), beginning to show dragonesque features, c. A. D. 100; *d* (Norton, Yorks.), fully developed dragonesque pattern.

objects dating very little, if at all, later than the Claudian invasion: thistle-brooches, a brooch of a kind found on Augustan sites on the Continent, and so forth. It is a simple plate of metal, quite undecorated, with a hooked projection at either end, one acting as a hinge, the other as a catch. A good deal later than this are two that show the date at which the dragon begins to emerge. One, found in the Victoria Cave at Settle, is a clumsy thing with meaningless mouldings at head and foot and across the middle (fig. 11, *b*); we have already seen reason to think that some of the brooches contained in these caves are Flavian, and this may be of the same period. A specimen from Segontium (Wheeler, *Segontium*, p. 133) is dated about the year 100, and here we find the head and tail becoming claw-like excrescences, ugly, unpleasant in design, but bearing a little eye-shaped ornament which shows that by about the year 100 the idea of turning this kind of brooch into a dragon was already entering the minds of craftsmen (fig. 11, *c*).

It may have been about this time that the decisive step was taken. The Newstead example shows the dragon fully formed, and dates before the reduction of the fort in size, that is to say, before 140. It therefore belongs to the Flavian occupation, or its Trajanic sequel. For the present purpose it is hardly necessary to reopen the question of the length of this sequel—a question which can, perhaps, never be precisely answered. At Wroxeter, a very similar brooch is dated before 130, and these are the only two fully-developed dragon-brooches which are dated with any approach to accuracy; the numerous examples at Traprain Law, for example, are so vaguely dated as to be hardly dated at all.

When once the dragon type of S-shaped brooch (fig. 11, *d*) has been established, it seems to banish all the others. At any rate, no S-shaped brooch

that lacks the dragonesque features seems to be necessarily, or even probably, later than about the year 100. Moreover, with very few exceptions, these dragonesque brooches are so much alike that they might be the products of a single workshop. That they did all come from the same workshop I do not suggest; but I do suggest that they were made in the north, where the great majority of them have been found, and represent a brief episode in the history of brooch-making, being perhaps driven from the market by the more practical and more beautiful trumpet-brooch. It is impossible not to be struck by the contrast between the long history and numerous imitations of the trumpet-brooch, and the paucity of varieties and almost complete absence of imitations of the dragonesque. The only imitation known to me is from South Shields.

It seems possible, then, that the S-shaped brooch, after becoming dragonesque and playing a part in the sudden efflorescence of Romano-Celtic art in Northumbria that marked the early second century, disappeared hardly less suddenly about the middle of the century or, more likely, earlier.

A fourth type of brooch that played its part in the same movement was the type which I propose to call the head-stud type (fig. 12). This is a stout, solidly-constructed brooch, its bow bent almost into a semicircle and normally square in section. Along the fore-edge of the bow is generally a band of ornament in enamel; the foot is boldly expanded, and at the head, just below the junction of the bow with the arms, is the stud which forms the most conspicuous feature of the type. The derivation of this brooch from native types of the first century offers a remarkable parallel to the case of the trumpet-brooch. The most striking feature—the acanthus in the one, the head-stud in the other—is in both cases an addition to a first-century brooch that lacked it. This prototype, in the case of the head-stud brooch, is known from the hoard found at Honley, near Huddersfield, and deposited about A. D. 75-80 (fig. 12, *a*). When a head-stud is added to this product of pre-Roman Brigantia, the head-stud type, as I call it, appears.

The date of this appearance cannot be exactly fixed. The *locus classicus* is the Lamberton Moor hoard, found significantly enough near Berwick-on-Tweed and containing what is perhaps one of the finest, and probably among the earliest, examples of the type (fig. 12, *b*). The hoard has been ascribed to the early second century (*P. S. A.* xxii, 59), and as an estimate this can hardly be bettered, but it is not susceptible of proof. Little importance can be attached to the fact that one example has been found in Germany with a coin of Trajan (*Röm. Funde aus Heddernheim*, iv, pl. ix, no. 18); and one from Corbridge, which I should place late in the series, is said (*Arch. Ael.* 3, vii, 40) to 'belong presumably to the middle of the second century', but was found without any associations. An example found at Balmuildy (fig. 12, *c*) must have been in use

in the years 140-197, and the same inference may be drawn from specimens on the Wall of Hadrian, and perhaps, though this is by no means clear, at Newstead. One curious fact, to which we shall return, is the presence of several at Traprain (fig. 12, *f*) which lack the decoration on the fore-edge. At other sites, examples with a plain fore-edge seem to be comparatively rare.

That these brooches go back to the Flavian period is very unlikely. They are widely distributed, but none has been found in the pre-Antonine forts in

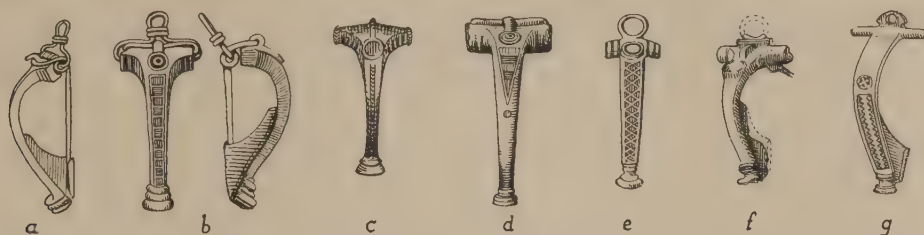


Fig. 12. Head-stud brooches ($\frac{1}{2}$): *a* (Honley), Flavian; *b* (Lamberton Moor), first half of second century (?); *c* (Balmuildy); *d* (Corbridge), middle of second century (?); *e* (Corbridge), slightly later (?); *f* (Traprain), cheapened form, c. 160-200 (?); *g* (Woodeaton), southern imitation.

Wales, and this seems to show that they did not begin to be exported from their home in the north (for there is no doubt of their being originally a northern form) until after the withdrawal of the Welsh garrisons towards the middle of the second century. No importance can, in my opinion, be attached to the fact that one has been found at Trier in the company of a first-century glass vessel, or the fact that their enamel is generally designed in a plain and simple pattern (*Newstead*, p. 323-4). Mr. Curle's view (*ibid.*), that most of them belong to the Antonine period, meaning the years 140-180, is one with which I entirely agree. It seems possible that they began to be made rather later than the trumpet-brooches, and later perhaps also than the dragonesque; but as early as the first half of the second century. In the middle of the century they were very popular, and in the south imitations of them were current which are comparable and perhaps contemporary with the imitations of the trumpet-brooches. An example of what I take to be such an imitation was found in the Caerleon Amphitheatre (no. 12).¹ Others, either continental imitations or very debased products of British workshops, may be seen in several museums on the Continent (Mainz, Trier, Bonn, &c.; fig. 13). They have a hinged pin and no head-loop, and their design is extremely clumsy and far removed from anything that has been found in the north of England or in Scotland.

The history of this group, so far as I can make it out, is that it originated

¹ How debased these imitations are may be seen when examples (e.g. *W.A.M.* xliii, p. 181, D; *ibid.*, p. 390, B; or the Woodeaton specimen, fig. 12*g*, at the Ashmolean) are compared with those figured in e.g. the Newstead, Traprain, and Corbridge reports.

in the north of England or the south of Scotland, early in the second century, perhaps not before the reign of Hadrian. It was easier to make¹ and to decorate than the trumpet-brooch, and became at least equally popular, being

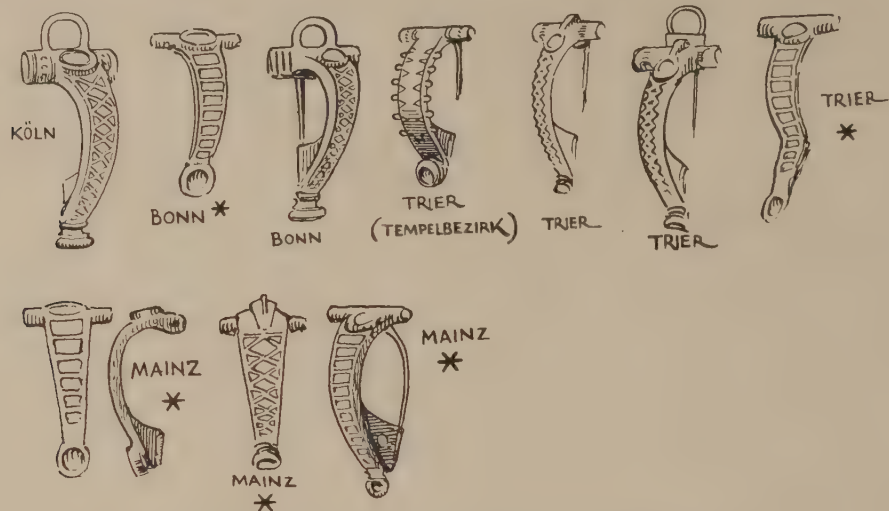


Fig. 13. Rough sketches of head-stud brooches found in Germany (not to scale); those marked * are probably south British or continental imitations of north British brooches.

imitated certainly in the south, and perhaps on the Continent also, in the middle of the century and very likely later. But we do not know what happened to the type in the north, its original home, after the middle of the century. Like the trumpet-brooches, it does not seem to have any history of lingering decline. Its decline falls outside its home district, in the imitations made elsewhere. The only qualification of this statement that can be made applies to the variety without enamel, which may be supposed a late and cheapened form. The fact that this form is common at Traprain Law (fig. 12, *f*), and not elsewhere, is suggestive.

The origin of these four groups of brooches, as our historical analysis has shown, takes us in every case to the early second century, and in two cases out of four yields evidence that the movement which occurred at that time owed its origin to the stimulus of new ideas introduced by the Roman conquest. How far the people who made these things were the successors of the people who made the Stanwick objects I cannot suggest. But it is, I think, clear that however much they owed to the Stanwick school, which was, after all, a school of somewhat effete and formalized decoration, definitely inferior in vigour and taste to its contemporaries in the south, they owed to the new Roman influence

¹ Flawed castings of trumpet-brooches are fairly common at Brough-under-Stainmore; but though head-stud brooches were made there, I have never seen a flawed casting of one.

much of what made their work art instead of mere craft. But before I conclude I must ask how this movement ended.

There is no evidence that it created anything new after the middle of the second century. Indeed, there is clear evidence that it did not. There is nothing strange about that; many movements in the history of art have exhausted their creative energy in a generation and lapsed into mere self-imitation. But the movement whose history we are tracing did not do this. So far from producing mere imitations of its former triumphs, it produced, after the middle of the century, little or nothing. The trumpet-brooch, after 140, did nothing but develop a cheap imitation of itself for mass-production. The head-stud brooch underwent exactly the same process, but its cheap form, instead of being exported in large numbers to the south of England, was very little made except at Traprain Law. Now the head-stud brooch seems to pass through its phases a little later than the trumpet-brooch. Probably, therefore, when the cheap trumpet-brooch was introduced, the cheap head-stud brooch had not yet been invented.

This suggests that the northern British workshops underwent some change, which caused them to stop producing their staple wares, between the general adoption of the cheap trumpet-brooch (? 150) and the introduction of the cheap head-stud brooch, an event which cannot have happened very long afterwards; and that this event did not affect Traprain Law.

What was the nature of this event? We cannot suppose that the northern workshops voluntarily ceased to work, or that they deliberately began to produce goods of a different kind. They were enjoying a regular trade boom, based largely on the cheap trumpet-brooch, and if that boom had continued it is hardly imaginable that they should have abandoned the goods that were being so successful and turned to the production of others. It is far more likely that something happened which crippled their power of production.

If we turn to the historical records of the time it is not difficult to see what this may have been. A well-known passage of Pausanias (viii, 43) tells us that Antoninus Pius annexed the larger part of the territory of the Brigantes because they made an armed attack upon the 'Genounian district'. No one has satisfactorily explained what or where this district was, nor does it greatly matter for my purpose. But the meaning of the emperor's action probably is, as Haverfield pointed out (*P. S. A. Scot.*, xxxviii, 457), that the Brigantes, who before this event were a self-governing *civitas* with a local government of their own seated at Aldborough, were deprived of this home rule in consequence of some unauthorized and violent action, and reduced to a state of dependence on the direct administration of the Roman governor. Haverfield connected this event with the inscriptions recording the governor Julius Verus, who about

the year 158 brought large reinforcements to the army of Britain and rebuilt a number of forts as far south as Brough in Derbyshire and as far north as Birrens in Dumfriesshire (*ibid.*).

Thus we have documentary evidence that about the time when the northern British workshops, with the apparent exception of Traprain Law, suffered some kind of disaster that lost them their trade and broke the continuity of their artistic tradition, the men of northern England were punished by Rome for something in the nature of a rising. That this punishment involved more than the mere loss of political rights we know from the fact that Verus re-established garrisons in the Brigantian country. It is possible that the matter did not end there. More than one ruler has felt it necessary to make an example of a people that has risen in revolt after laying down its arms. Julius Caesar, when the Gaulish rebels in Uxellodunum surrendered, 'saw' (in the words of Dr. Rice Holmes) 'that, if these rebellions were to break forth again and again, his work would never be at an end. He was aware . . . that his clemency was notorious, and had no fear that any measures which he might be forced to adopt would be misunderstood. He determined, therefore, to inflict upon the garrison a punishment so appalling that all malcontents should in future remain quiet.' It is conceivable that two centuries later another Roman argued in the same way, and carried into the north of England the same methods by which William the Conqueror was to persuade the same region that there was a king in England. If that is what Julius Verus did to the Brigantes, it is not surprising that, except where it lingered out of harm's way in the remote stronghold of Traprain Law, the renaissance of Celtic art that had been produced by the coming of the Romans should have found a sudden end.

Note on the Nomenclature of Brooch-Types.—The provisional adoption, in this paper, of the German name *Distelfibel* for the brooches shown in fig. 1 is open to the objection that the name thistle-brooch is already used for a Viking Age type; the use of the term trumpet-brooch, to the objection that these objects may be thought more like harps than trumpets. Objections of a similar kind can be brought against any nomenclature based on fancied resemblances or places of discovery; and genuinely descriptive names (such as those used in figs. 2, 11, and 12) cannot always be devised. The writer has therefore proposed, in a recent book on *The Archaeology of Roman Britain*, a series of lettered and numbered types for the commoner Romano-British brooches, which, if found acceptable, will enable students to drop these names altogether; but did not feel justified in dropping them in the present paper, which was in type before the publication of the book.

III.—*Excavations at Kingsdown Camp, Mells, Somerset, 1927-9.*

By H. ST. GEORGE GRAY, *Esq., F.S.A.*

Read 20th February 1930

INTRODUCTION

THE survey of Kingsdown Camp¹ began on 12th August 1927, and digging in that year was in progress from 15th August to 27th August. In 1928 operations were continued from 7th February to 1st March, and from 10th April to 5th May. The work was completed in 1929, from 8th April to 24th April, and from 7th October to 19th October.²

Kingsdown Camp is very small, and hardly worthy of the name 'camp'. Until recently it was little known, except to a few archaeologists interested in Somerset earthworks and their distribution,³ and those who may have read the short description in the *Victoria County History*, where it is described as 'comparatively modern, and probably a small temporary camp of the Parliamentary war or possibly of the Monmouth rebellion'.⁴

¹ The Director-General of the Ordnance Survey kindly gave information that the true magnetic variation on 1st July 1927 was 13° 55' west of true north.

² Besides being responsible for the records, the surveys (plan and sectional diagrams) were done by myself. To our Fellows the Very Rev. Father E. Horne and Dr. A. Bulleid I am indebted for the photographs of the excavations in the various stages of the work; and they undertook a certain amount of superintendence in my absence during the 1927-8 operations. In 1929 I was in the field during the greater part of each day. To Dr. and Mrs. Bulleid I am greatly obliged for their hospitality at Midsomer Norton, five miles from the camp.

I am also greatly indebted to Lady Horner for permission to dig on her property, and to her tenants, especially to Mr. Panes who left the district before the completion of the work.

I am also glad to record that it was through the instrumentality of our Fellow Lord Hylton, who is a vice-president and trustee of the Somerset Archaeological Society (under whose auspices the excavations were carried out), that the work was started, and the expenses of the earlier part of the explorations in 1927 and 1928 were to a large extent defrayed by him.

In addition I have to thank Sir Arthur Keith, F.R.S., Dr. F. S. Wallis (geologist, Bristol Museum), Dr. T. Davies Pryce, and officers of the British Museum for valued assistance in the examination of some of the specimens.

The regular men employed for the digging included Mr. W. E. Young (foreman), who made some useful notes especially in my absence.

³ The site had been visited by Dr. Bulleid and myself on 1st August 1921, when we collected from the mole-heaps a number of flint flakes and some small fragments of Romano-British pottery (*Proc. Som. Arch. Soc.*, lxviii, xc).

⁴ *V.C.H. Somerset*, ii, 527. The camp is just alluded to in the *History of Kilmersdon*, by Lord Hylton, pp. iii, 122. See also the Map at the end of that book.

Collinson,¹ in 1791, described the camp as follows:

On the summit of the down, called Kingsdown, there is a square area, surrounded by a fosse nearly obliterated, with an entrance on the north, in which, tradition says, was formerly fought a bloody battle, great numbers slain, and in particular two kings; from which circumstance the down derived its name. The bodies of the slain were said to have been interred in a large adjacent tumulus, which being levelled some years since, in making the turnpike road from Frome to Radstock, disclosed a vast quantity of human bones corroborative of the tradition.²

Kingsdown Camp is situated in an almost flat grass field in the NW. corner of the large parish of Mells, at an altitude of 600 feet, and forms part of Mells Down farm.³ It is a short distance to the south of Ammerdown Park, which is, for the most part, in the parish of Kilmersdon. In other words, the site is about half-way between Radstock and Frome, and three furlongs in a direct line NNE. of Mells Road Station. The nearest point on the Fosse Way is about $3\frac{1}{2}$ miles to the NW., but the Roman villa at Whatley is nearer, namely, $2\frac{3}{4}$ miles south of the camp, and bordering Nunney parish (p. 87). The remains of what were once first-class mosaic pavements have been destroyed, but for many years they were covered by a shed.⁴

Although the ancient earthworks in this neighbourhood are, outwardly, not of the first importance, they are fairly numerous. Besides Kingsdown, the parish of Mells can boast of two other earthworks and the western ramparts of another, i.e. Tedbury Camp,⁵ a large promontory camp of some sixty acres, situated for the most part in the parish of Great Elm, and bounded by two picturesque ravines, the Mells stream on the north and the Fordbury stream on the south, both feeders of the river Frome. There is a record that this camp has produced Roman coins and quern-stones, and certain undescribed 'implements'. It is only $2\frac{1}{4}$ miles SE. of Kingsdown, and in elevation 200 ft. lower, i.e. about 400 ft.

Wadbury Camp⁶ is another promontory fortress (about seven acres) on the north side of the Mells stream and very close to Tedbury, 400 ft. in elevation and two miles SE. of Kingsdown.

¹ *History of Somerset*, ii, 462.

² The Rev. J. Skinner mentions this large tumulus on Buckland Down (Brit. Mus. Addit. MS. 33681, vol. lxii, p. 59 et seq., 'Journeys and Travels'). See also *Proc. Som. Arch. Soc.*, lxvii, 43.

³ This land was occupied by Mr. H. W. Panes during the greater part of our work; the succeeding tenant was Mr. A. B. House.

⁴ *V.C.H. Somerset*, i, 317.

⁵ Allcroft, *Earthwork of England*, 61; *Proc. Som. Arch. Soc.*, xxiv, i, 74; xlix, 177-8; *V.C.H. Som.*, ii, 476; Phelps, *History of Somerset* (Earthworks Section, 1835), 104-5.

⁶ Allcroft, *Earthwork of England*, 61; *V.C.H. Som.*, ii, 477; Phelps, *History of Somerset* (Earthworks Section), 105.

Then there is Newbury Camp, a small rectangular entrenchment on Newbury Hill, which stands at an elevation of 477 ft., and is situated 13 furlongs SE. of Kingsdown.¹

It is but $5\frac{1}{2}$ furlongs NE. from Newbury to Barrow Hill (parish of Buckland Dinham), where Saxon remains of the sixth century were found in 1925² (Taunton Museum).

From Barrow Hill it is only a mile eastward to Murtry Hill, Orchardleigh Park, where scanty remains of a chambered long-barrow are to be seen.³

In this brief summary of ancient remains in this neighbourhood might also be mentioned Merehead Camp on Mendip, a triangular entrenchment of about six acres, near Leighton, and in the parish of Cloford,⁴ situated at the southern extremity of a ravine which intersects the ridge of Mendip and an outlet made by the waters of Cranmere. Merehead is $5\frac{1}{4}$ miles SSW. of Kingsdown.

And lastly, Blacker's Hill Camp, in the parish of Chilcompton, should be mentioned,⁵ as the geologist also has an interest on account of the deep fissures existing there. This somewhat puzzling camp is $5\frac{1}{4}$ miles WSW. of Kingsdown.

DESCRIPTION OF KINGSDOWN CAMP

The precise situation of Kingsdown Camp is on almost level downland, with a considerable fall at a little distance on the south and west, but the position is not strong. Immediately to the east of the camp a small mound was noticed, and the large field is traversed in various directions with curved and irregular banks, the age of which is doubtful. They are apparently, for the most part, composed of local stone, and the nearest part approaches the Entrance on the NE. side of the camp. These features were not entirely neglected, for as far as time permitted we made cuttings through these banks

¹ *V.C.H. Som.*, ii, 496; Phelps, *History of Somerset* (Earthworks Section), 105. I visited this camp for the first time on 15th October 1929, and found the mapping (6 in. Ordn. Sheet, *Som.* xxx, SW.) somewhat incorrect. On the W. and NW. side the inner bank had been 'quarried' in several patches—in places right through the bank. The flat turf surface of the silting is 12 ft. wide on the west side and 14 ft. on the north side.

² *Antiq. Journ.*, vi, 77-8; *Proc. Som. Arch. Soc.*, lxxiv, lviii.

³ I conducted excavations here in 1920 (*Proc. Som. Arch. Soc.*, lxxvii, 39-55). Having learnt, in 1929, that this barrow had been examined and apparently partly excavated by persons known to Philip Crocker in 1803, I have recently made a record of the fact (*Proc. Som. Arch. Soc.*, lxxv, 57-60).

⁴ *Proc. Som. Arch. Soc.*, xlix, 177; *V.C.H. Som.*, ii, 475; Phelps, *History of Somerset* (E.S.), 110-11.

⁵ Allcroft, *Earthwork of England*, 58-60; *V.C.H. Som.*, ii, 487; Phelps, *History of Somerset* (E.S.), 104.

in two places (one being Cutting IX),¹ cut a section through the slight mound (Cutting X),² and a large section through a larger mound in the NNE. corner of the field (Cutting XIII).³ Perhaps some archaeologist specially interested in these outlying banks will in the future solve the question of their purpose. The chief is a sinuous bank which runs from a rather steep declivity in Kingsdown Wood to the road extending along the south side of Ammerdown Park, where the ground is practically level. Through this bank we made a cutting (no. VI).⁴

¹ The position of Cutting IX through the bank which approaches the NE. Entrance of the Camp is shown on the Plan (pl. xv), and a Sectional Diagram on line EE–FF is given in plate xvi. The width of the cutting was 6 ft. The width of the wall appeared to be about 6.5 ft., but the courses exposed to view had slipped, for which allowance had to be made. The third course from the bottom consisted of three large pieces of Forest Marble. The rock bottom in the cutting was very irregular. Five flint flakes were found, but no pottery.

² This mound, which is seen on the Plan, has a diameter of 26 ft. and an elevation above the surrounding field of 0.6 ft. A cutting (no. X) was made, 25 ft. long and 5 ft. wide, from N. to S. It was disappointing, for the rock, fairly flat but somewhat fissured, was reached at a maximum depth of 1.2 ft. at the centre of the mound; at the margins the minimum depth was only 0.4 ft. The material excavated was a pure fine loam with no black ash nor loose stones, and there was no trace of an old turf line. The finds consisted of four flint flakes, a burnt flint, and five fragments of Romano-British pottery.

³ Cutting XIII.—In the NNE. corner of the 'camp' field and beyond the sinuous banks an irregular mound was noticed through which we made a cutting (no. XIII) 35 ft. long by 2.5 ft. wide. The centre of this line on the N. side was 79 ft. from the stile in the NE. corner of the field, and 40.5 ft. from the stone wall on the east.

A 'cairn' of stones was found beginning at 12 ft. from the W. end, and it extended 17 ft. eastwards. On the bottom of the cutting, depth 1.25 ft., an *axis* (human) was found and a few pieces of coarse pottery of prehistoric type (P 27). On this account I extended the cutting in this part southwards, making the cutting 8.5 ft. wide. At 18 ft. from the W. end remains of a human skeleton (M 4) were found at a depth of 1 ft. The skeleton was of a young person, the bones not in sequence and incomplete, occupying an area about 2 ft. square. A very small part of the head was found. The bones may have been brought here for re-interment.

P 27 also included a small piece of Romano-British pottery found in the S. extension, depth 1 ft., and off the actual mound.

To the SE. of the centre a 'cairn' of largish stones occurred under the turf mould. Below these stones a layer of reddish-yellow mould, rather dark (thickness 4 in. to 6 in.), was met with, in which a small part of the base of a prehistoric urn was found (P 28), also a flint flake. This apparently represented the old surface before the stones were thrown up in this position—stones possibly picked up in cultivating the land. The excavation was carried to a depth of 2.2 ft. below the summit of the mound.

The mound is roughly 60 ft. E. and W. by 35 ft. N. and S., and appeared to be placed on a slight ridge. Its maximum height above the surface of the field is 1.6 ft. No definite results were obtained from this excavation, and time did not permit of our uncovering the whole area.

⁴ This cutting (no. VI) was 31.5 ft. long and 5 ft. wide. The distance from point 'M' on the E. wall of the camp to the highest part of this outlying bank (N. side) was 184 ft. The bank proved to be loose walling, width 11 ft. On the E. side of the wall an oval hole, 4.5 ft. by 2 ft., was uncovered, and on the W. side a circular post-hole, diameter 0.95 ft., depth below the rock 0.8 ft. The average depth of the surface of the rock in this part of the field was 1 ft. No relics were found here.

To the S. of Cutting VI, and 34 ft. W. of the sinuous bank or wall, a depression was noticed, and

Geologically, Kingsdown Hill consists of beds of Inferior Oolite age, capped by a layer of Forest Marble. 'These Forest Marble beds', according to Dr. F. S. Wallis, who visited the excavations in 1928, 'consist chiefly of current-bedded shelly limestones, the individual strata being of no great thickness. This rock forms the top 4 ft. or so of the ancient ditches exposed in the excavations. Often the rock is in a decalcified condition, and easily crumbles away in the hand. Underneath this shelly limestone is seen a band—the maximum thickness exposed is only about 1 ft.—of yellowish, loosely compacted, calcareous sandstone. This sandstone is full of small fragments of fossils and is also of Forest Marble age.

'The upper surface of the Forest Marble shelly limestone is very irregular, being eroded into a series of ridges and hollows. In addition to this the limestone is traversed by a number of vertical fissures. These hollows and fissures are filled with a stiff yellowish loam of recent date.

'For this reason, in some cases, the rock is near the surface and the soil and subsoil are thin, whereas in another part of the excavation the rock is not reached until a greater depth, and the soil and subsoil are relatively thicker.'

In the first place (August 1927) I made a working-plan, on a scale of 20 ft. to an inch, with contours of 6-in. vertical height, showing a fall in the area from the N. rampart to the SW. corner of the plan of 8.5 ft. From the working-plan gradually developed the Plan, plate xv, which shows the position of all the excavations; and this record and the preparation of a number of Sectional Diagrams (pl. xvi, and fig. 1) were intended all through to be a strong feature of the work.

The area enclosed by the marginal lines (which are in the position of the points of the compass) is a matter of $1\frac{7}{8}$ acres, but the wall of the camp encloses little more than three-eighths of an acre.

The camp used to be described as pentagonal, but a careful survey shows it to be almost heart-shaped, the point of the 'heart' to the north. The external measurement, N. and S., including the Outer Ditch, is 170 ft. The Outer Ditch clearly showed previous to excavation on the N., NE. and NW., where the top of the wall stands 3 ft. (maximum) above the surface of the silting of the ditch. Other parts of the Outer Ditch had completely silted up. An entrance on the NE. was clearly seen, the present gap between the ends of the rampart being 26 ft. But there was before excavation no indication of the existence of the Inner Ditch, which proved later to measure externally 135 ft. from N. to S. by 111 ft. from E. to W. Across this earlier ditch at the NE. Entrance, after

Cutting VII was made across it, N. and S. It did not prove to be an artificial pit, and no relics were found.

it had silted up to a fair extent, a stone pavement,¹ extending for a length of at least 25 ft., had been laid by the Romans when they made the Entrance and dug the Outer Ditch.

Between the ditches a broken-down dry-stone wall was uncovered, which no doubt was considerably higher at the time of its construction (pl. XII). It was built upon the solid rock (except in the parts where the solid rock did not exist). The upper stones from the overthrown wall are found to-day in the silting of the early Roman Outer Ditch. This wall² in the parts examined had a minimum width at base of 6 ft., and a maximum width of 9 ft.

Later, our investigations led to the discovery that the Inner Ditch was not continuous on the SSE. side, and an Entrance, about 28 ft. wide (partly seen in pl. XIV, fig. 1), had been left by the earlier people; and in the middle of this Entrance we found part of a pavement of cobble-stones, extending northwards from the wall a distance of 16.25 ft.; maximum width of part examined, 4 ft. On the west side of the pavement, which was laid on the natural loam, solid rock extended 12 ft. from the end of the Inner Ditch on this side, but on the other side of the cobbles the natural loam of the Entrance extended eastwards up to the termination of the ditch on the east side of the Entrance.

On the S. side of the camp and on the W. side of the southern Entrance for a distance of about 38 ft. it was found, as the drawings clearly show, that the Roman wall was built overlapping the silting of the Inner Ditch (photograph, pl. XIV, fig. 1); the overlap was slight on the west, but gradually increased towards the east where the inner face of the wall extended over one-half the distance across the Inner Ditch. This is well seen in the Section on line PP-QQ of Plan (pl. XV).

Generally speaking, the Inner Ditch was cut into the Forest Marble, but where there was no rock near the surface or a fissure occurred, the ditch and Holes 3, 4, and S were found to have been continued in the undisturbed reddish-yellow loam, which Dr. Wallis regards as being of Forest Marble age.

The Inner Ditch (pl. XIII) was cut very irregularly, and the whole of it was re-excavated. In one part on the north it was wide and well cut, and yet a foot or so to the east, at post-hole 'r', it was extremely shallow, and for 2 or 3 ft. hardly existed. There was a sudden drop of 0.95 ft. from the shallower to the deeper part of the ditch here. The Inner Ditch on the whole was evidently cut out of the solid rock with inferior tools, and the workmanship was generally of a rough description. This ditch varied in width at top from 4.7 ft. to 8.5 ft.,

¹ Below the slabs forming a flat pavement were other slabs of stone placed on end and fairly close together. Some of the stones used for this purpose were 3 ft. in length.

² A piece of limonite was found with the stones on the top of the wall in Cutting XII. 'It is an example of the common mamillated form with a radiating fibrous structure' (F. S. Wallis).

and at the bottom from 2.5 ft. to 5.5 ft. The average depth (excluding the very shallow part on the north) was 3.65 ft.

In strong contrast to the Inner Ditch, the Outer Ditch was skilfully and regularly cut into the solid rock with superior tools, as will be seen by the photograph (pl. xiv, fig. 2); but in the parts excavated (a total length of 70 ft.) its dimensions varied considerably—the maximum width at the top being 10.5 ft. in Cutting II on the NE., as compared with the minimum width in Cutting III on the SW. of 4.7 ft. The bottom varied greatly also, being 4.2 ft. in maximum width on the NE., and only 0.7 ft. in minimum width on the SW. The average depth of this V-shaped ditch below the surface was 5.25 ft. The sloping sides were so evenly cut in places as almost to give the appearance of masonry.

In the Roman Entrance-way we discovered two large holes, the centres of which, at the SW. or larger ends, were 10 ft. apart. It is estimated that the nearest points of the two large gate-posts they would have contained would be about 7 ft. apart.

At first it seemed difficult to account for the great distance the ends of the Roman wall were apart in the Entrance-way; the position was as expected on the NNW. side, but there was a considerable space between Hole '1' and the wall to the south. This problem, however, was solved when the Outer Ditch was traced on the S. side of the Entrance. Its position proved that the wall here must have been entirely destroyed; it probably extended northwards originally, as shown by the dotted line in my Plan. This would make the Entrance-way about 17.5 ft. wide between the walls, and 25 ft. wide between the ends of the Outer Ditch.

SOME DETAILS OF THE EXCAVATIONS

Cutting I, Outer Ditch. This cutting was made across the rampart and Outer Ditch at the surveying-station 'A', and on the NW. side of the NE. Entrance. It measured 28 ft. in length and 6 ft. in width. A Sectional Diagram (fig. 1) was made on the line SW.-NE. of Plan, from which most of the dimensions can be obtained. A dry-stone wall was found just below the turf of the 'rampart'; this was not dug. The margin of the wall, however, was cleared all round to its termination on the east, where it was finished off by a stone about 2 ft. long. The Forest Marble walls of the ditch were traced downwards, but the bottom was difficult to identify owing to the presence of a natural fissure in the rock at this point, which widened out as we went deeper. It was estimated that the bottom was at about 4.2 ft. below the surface, but we extended our excavation into the fissure to a depth of 7.25 ft., and pottery of Roman date was not only found in the ditch proper, but also in the fissure below. The silting consisted, below Layer 1, of large pieces of stone for the most part—remains of the overthrown wall—and those at the bottom were mixed with a sticky reddish loam.

Among the finds was a piece of imitation Samian, P 3, found at a depth of 7 ft.

Later, in uncovering the NE. Entrance, Cutting V, the termination of this part of the Outer Ditch was revealed, as shown in the Plan.

Cutting II (and its later Extension), chiefly Inner Ditch (pl. xii, fig. 1). We next proceeded to make a similar cutting to Cutting I at the extreme north (at point 'C'), and it was at first pegged out to measure 39 ft. in length (NNW. by SSE.) and 6 ft. in width. A well-cut part of the Outer Ditch was revealed here, and the rock bottom, reached at a minimum depth of 3.5 ft., was fairly smooth and even (3.5 ft. wide on the W. side and 4.4 ft. wide on the E. side of the cutting).

The dry-stone wall was rough on the north, not showing any layers, but on the south it was very regular and laid in horizontal courses; the stones were sometimes 4 in. in thickness (average thickness 3 in.). Its height here above the natural rock was 2 ft. (pl. xii, fig. 1). At this point it very slightly overhung the silting of what proved to be an inner ditch. As the digging proceeded deeper we found a hollow in the natural rock, and extending the cutting westwards and then south-westwards, it soon became evident that we were dealing with an Inner Ditch, which in the original Cutting II was very irregular, and therefore at first very puzzling (see Section on line V-C-V of plan, fig. 1).

This work led to the discovery of a post-hole, 'r', in the middle of the shallowest part of the Inner Ditch (marked on Plan, and in Section on line C-Q, pl. xvi). This was a circular hole in the solid rock about 1.65 ft. in diameter; depth below rock, 0.5 ft. In the hole four or five stones (about 1 ft. by 0.7 ft.) were found on end in a slanting position round the sides. Later, to the west, near the inner margin of the Inner Ditch, Hole 'm' was found, 7.5 ft. from Hole 'r' (centre to centre). This is seen in the Plan and in the Section on lines N-P and R-S (fig. 1). It was 2.1 ft. in diameter, and its depth below the rock 1.06 ft. The sides sloped, rather steeply in places, and only one stone was found on end (on the SW. side). The flat bottom measured about 1.5 ft. by 1.35 ft.

In continuing the excavations southwards an endeavour was made to find more post-holes corresponding to 'r' and 'm', but no others were revealed.

It was in this part of the Inner Ditch that the iron dagger (I 1) was found close to the rock bottom (fig. 7 and p. 85), and the *as* of Domitian (p. 88) at a depth of 1 ft., in the middle of the ditch. Here, in Layer 1, were found two pieces of Samian pottery, P 4, 'not later than Vespasian's reign' (Pryce).

Cutting III, Inner and Outer Ditches. This cutting was first pegged out slightly to the E. of the SW. corner of the camp, across the Inner and Outer Ditches, and measured 34 ft. in length by 6 ft. in width. Owing to its interest the cutting was later extended round the SW. corner. It was in this position that the finest face of the Outer Ditch, cut evenly into the Forest Marble, was revealed (see photograph, pl. xiv, fig. 2). The sides of this ditch were in places slightly convex, but generally the faces were flat and well tooled.

On referring to the sectional diagrams (pl. xvi), on the lines T-U and CC-DD, it is seen that the mean depth of the Outer Ditch was 4.75 ft.,¹ and the Inner Ditch 3.75 ft. The

¹ At the NW. end the depth was 5.3 ft. Here the mould, with turf was 0.75 ft. deep, then for a few inches mould and largish stones, then a mass of stones from the overturned wall, and at the bottom 18 inches of comparatively fine silting (pl. xiv, fig. 2).



Fig. 1. Inner Ditch (Cutting II). View, looking N., showing the dry-stone wall just overlapping the 'corner' of the Inner Ditch. Also, on the extreme right, the Inner Ditch at its shallowest part. (August 1927)



Fig. 2. Cutting XII. Inner face of the dry-stone walling at the SE. corner of the Camp. (May 1928)



Fig. 2 Inner Ditch on the E. side (Cutting XV). In this part of the Inner Ditch (looking N.) the currency-bars, British coin, and five of the infants were found. (April 1929)



Fig. 1. Inner Ditch on the NW. (Cutting II Extension), looking N., also showing the wall on the N. and NW. (April 1928)

67

The diagrams are cross-sections of a riverbed, showing the profile of the riverbed and the surrounding terrain. The diagrams are labeled 'CUTTING I' and 'CUTTING II'. Each diagram shows the riverbed profile with various features like 'WALL', 'INNER DITCH', 'HOLE', 'OUTER DITCH', and 'NATURAL FISSURE'. The diagrams are oriented with North (N) at the top. A scale bar at the bottom right indicates distances from 5 to 10 units.

CUTTING I.

Diagram 1 (top left) shows a cross-section of the riverbed. The profile is marked with points 16, 12.9, 10.15, 8, 6.5, 4.23, 1.9, and 0. The riverbed is labeled 'WALL' and 'INNER DITCH'. A 'HOLE' is marked at the bottom. The profile is oriented with North (N) at the top.

CUTTING II.

Diagram 2 (top right) shows a cross-section of the riverbed. The profile is marked with points 25.5, 17, 15.5, 12.5, 10.1, 8.75, 5.6, 4.2, 1.9, and 0. The riverbed is labeled 'WALL' and 'INNER DITCH'. A 'HOLE' is marked at the bottom. The profile is oriented with North (N) at the top.

CUTTING I.

Diagram 3 (bottom left) shows a cross-section of the riverbed. The profile is marked with points 6, 7.6, 3.75, 1.3, 0, 1.5, 5.5, 11.15, 15.85, 20.4, and 23. The riverbed is labeled 'WALL' and 'OUTER DITCH'. A 'NATURAL FISSURE' is marked at the bottom. The profile is oriented with North (N) at the top.

CUTTING II.

Diagram 4 (bottom right) shows a cross-section of the riverbed. The profile is marked with points 5, 10.8, 9.5, 6.5, 3, 4, 6, 9, 11, 12.5, 16, 17.85, 21.25, 24, 29.6, and 35. The riverbed is labeled 'WALL' and 'OUTER DITCH'. A 'PROBABLE BOTTOM' is marked at the bottom. The profile is oriented with North (N) at the top.

A scale bar at the bottom right indicates distances from 5 to 10 units.

Fig. 1. Sectional Diagrams, Kingsdown Camp, Mells, Somerset.

Ditch was very irregular at this corner, but the bottom of this ditch ² and the Outer Ditch ³ were fairly flat. The wall rested on the surface of the rock, and varied in width from 6.2 ft. to 8.3 ft.

The Inner Ditch had about 0.8 ft. of mould at the top; below that mixed silting, consisting of mould with small stones, and in places patches or layers of dark mould and black ash (generally at an average depth of 2.3 ft.). This area of dark material was generally speaking nearer the inner than the outer side of the ditch.⁴ At a depth of

¹ Both ditches were widest at the actual bend.

² The bottom of the Inner Ditch was flat in the middle, and rose to the extent of 0.75 ft. at the NW. end; at the E. end there was a slight drop.

³ The bottom of the Outer Ditch varied in level to the extent of 1.05 ft., the E. part being deeper than the W. end.

⁴ The upper two layers of the Inner Ditch generally consisted of a black earthy mould with an admixture of burnt ash and a little charcoal, and very few stones of any size. The larger slabs of stone were found in the silting of the Outer Ditch, and in some places they were met with in Layer 3 of the Inner Ditch.

about 2.6 ft. there was a distinct change in the nature of the silting, from a black ashy material to a heavy yellow clay in the middle of the ditch and a fine yellow silt along the sides. Without exception the larger slabs of stone lay in a sloping position towards the outer side of the ditch. In this part of the ditch and at a depth of 3.25 ft. (and lower) several fragments of pottery of a prehistoric type were found (p. 80).

The Outer Ditch did not produce much pottery. Red Samian, P 14 and 15, was, however, found near the bottom and on the bottom, which is commented upon on p. 77.

It was on the extreme eastern margin of this cutting in the Inner Ditch that the fine bronze and enamel brooch (E 5), of the latter half of the first century, was found at a depth of 1.25 ft. (fig. 5 and p. 81).

Cuttings IV and VIII, Trenching in the Interior Space. Early in the work a trial-cutting (no. IV) was made obliquely across the camp from NE. to SW., to ascertain the nature of the surface soil and the sub-soil, and incidentally to find anything of structural importance such as pits. The cutting measured 79 ft. in length and 2 ft. in width. Except at the SW. end, where the rock was not present near the surface, the Forest Marble was reached at depths varying from 0.5 ft. to 0.85 ft. Its surface was somewhat irregular. No holes were found, and the relics discovered were of no special interest.

Cutting VIII, 6 ft. by 6 ft., was dug in the Interior Space, as a depression in the surface was noticed in this position. Solid rock was reached at a minimum depth of 0.7 ft. A loose hollow, on the NW. side, was cleared out, maximum length 3.3 ft. N. and S., depth 2.1 ft. It was apparently a natural hole in the rock; mould filling and a little yellow sand on the bottom. The pottery, etc., found was of no special interest.

Cutting I'. (a) The NE. Entrance. A large excavation was made here between the points 'A' and 'M', resulting in determining the position of the NE. Entrance into the camp, as proved by the excavations which revealed two large and a number of smaller post and other holes; also the termination of the Outer Ditch on either side of the entrance, the space between measuring 25 ft. It was evident that the wall originally extended northward of the point 'M' to the extent of the dotted area indicated on the Plan, pl. xv, making the entrance-way between the original ends of the wall, on N. and S., 17.5 ft. wide. On reaching the camp proper the Inner Ditch was found partly silted, partly filled up, and paved for a length of about 25 ft. by the Romans on the level of the natural rock, when they made their entrance into the camp and constructed the Outer Ditch.

Under this heading we will briefly describe the post and other holes, 'a' to 'l', and 'q'—the two largest and most important being the pair marked 'k' and 'l'.

Hole 'l' was 6.5 ft. from the nearest part of the pavement across the Inner Ditch. Hole 'k' at its nearest was only 1.5 ft. from the wall to the NW. These holes are seen in the Sectional Diagrams, A-Z, AA-BB, and W-X, pl. xvi.

Hole 'k', the more northerly of the pair, was flat at the bottom, where it was 6.7 ft. in length. On the S. margin there was a loose fissure in the rock running southwards (Section W-X). Where the rock gave the right stratification the tooling on the walls of the hole, especially on the S. and W., was first-class. This hole was 9.7 ft. in length, and 5.3 ft. in maximum width at the level of the rock. Depth below the surface, 3.8 ft.

Hole '1' was also flat at the bottom, where it was 6.25 ft. in length. The walls of the rounded W. end were well tooled. This hole was 9.5 ft. in length, and 6 ft. in maximum width at the level of the rock. Depth of hole below the surface 3.7 ft.

Romano-British pottery, including a fragment of imitation Samian with 'engine-turned' ornament, was found at the bottom of the holes, but they contained nothing else of importance, and there was no trace of wood.

Hole 'e' between the two large holes had no special significance. It measured about 2.5 ft. by 2.5 ft. at the rock surface, and its depth below the rock was 1 ft., the bottom flat. Probably a natural hole in the rock.

In addition the following holes were discovered :

To the east an irregular hole, 'a', length 3.2 ft. with a rounded, well-tooled post-hole (1.1 ft. by 0.95 ft.) on the W. side, depth 1.25 ft. below the rock surface.

Nearer the ancient gate is Hole 'b', apparently a post-hole measuring at the rock-level 1.35 ft. by 1 ft., depth below the rock 1.1 ft.

Close to the margin of the Outer Ditch, Hole 'c', of irregular form, length 1.25 ft., width 0.8 ft., depth below the rock 0.85 ft. To the S. and also on the margin of the Outer Ditch, a circular post-hole, 'd', diameter 1 ft., having upright sides and a flat bottom, and containing five packing-stones; depth below the rock 1.25 ft. To the W. of Hole 'd', a shallow depression (0.5 ft.) in the rock, called Hole 'f', measuring 1.9 ft. by 1.5 ft., which owing to its position (i. e. under the wall which formerly extended in this direction) has, apparently, no significance.

Holes 'h' and 'i', shown on the Plan, call for no particular comment; probably natural hollows in the rock.

Hole 'j', which is seen in the Section A-Z, pl. xvi, was 0.6 ft. deep on the W. side and 1.5 ft. on the E. side below the rock-level. It contained eighteen loose packing-stones.

Hole 'q', near the Inner Ditch, measuring 1.25 ft. by 1.35 ft., was probably a post-hole. It contained several packing-stones.

The perfect pair of tweezers, E 4 (fig. 6 and p. 84), was found in the entrance-way, between Holes 'a' and 'b'.

(b) *The Outer Ditch.* This ditch in Cutting I has already been described. Its continuation to the end at the Entrance was traced later, and owing to the nature of the rock it had been finished off very roughly, and had a maximum width at the top of 11.5 ft. Nothing of interest was found here.

On the other side of the Entrance the Outer Ditch had been much more uniformly cut into the rock, and the maximum width at the top was 8.3 ft. At the north or rounded end there were ledges which might easily have served as steps to get down into the ditch. The end-face to the S. was photographed and the seams measured vertically in the middle. Turf mould, 0.35 ft.; mould and small stones, 1 ft.; below that, large stones and mould extending in the middle of the silting to 3 ft. below the surface; still lower, mould and smaller stones again; and for the last 2 ft. fine silting with few small stones. The ditch is shown in the Sectional Diagrams, AA-BB, and O-M-Y, pl. xvi.

Romano-British pottery fragments were found sparingly from top to bottom. In Layer 2, most of the pottery was thin black ware, lathe-turned, and apparently for the most part belonging to one vessel.

On the NE. margin of this piece of Outer Ditch, Hearth ii was found, the nearest edge of it being 6 ft. from the S. face of the cutting at 'O'. It was found to be 1.6 ft. below the surface of the turf. It appears to have been cut through when the Outer Ditch was made, as the baked clay and burnt supporting stones stopped short on the edge of the ditch, instead of continuing its round outline. From the fact that some of the baked clay was found on the sloping side of the ditch (depth 3.1 ft. below the surface) it was clearly proved that it could not have been burnt in that position, after the ditch was made. On the SW. margin a post-hole was discovered cut into the edge of the Outer Ditch. Several fragments of pottery were found, all of British type and probably prehistoric. The greater part of a muller, S 2, was also found; and a large whetstone, S 1, also part of another. Charcoal was observed, and fourteen burnt stones belonging to the hearth were counted.

(c) *The Inner Ditch.* A considerable length of this ditch was dug close to the Entrance and for a long distance in a NW. direction until it joined up with Cutting II, where, at Hole 'r' (see Section C-Q, pl. xvi), the ditch was practically non-existent. It had gradually diminished in depth as it extended north-westwards (see also Sectional Diagrams on the lines JJ-KK and HH-GG).

In front of the ancient entrance the line of the Inner Ditch had been paved with slabs of stone (some of them 2.75 ft. long) after the partly silted-up ditch had been filled in with stones; some of them stood on end, at a level about 0.5 ft. above the bottom of the ditch. This pavement extended for a length of about 25 ft. as shown in the Plan, pl. xv. To the south of the pavement, the Inner Ditch is shown in section in pl. xvi on the line A-Z of Plan, and on this line Hearth i occurred.

This was a clay hearth, with brown, reddish-brown and black ash, about 0.2 ft. thick, found near the bottom of the silting, the surface 2.25 ft. below the turf. Its outline was oval, 1.7 ft. E. and W. by 1.35 ft. N. and S. It sloped slightly from the E. to the N., S., and W. Between the hearth and the bottom, part of a flint knife, F 14, was found, and slightly below the level of the hearth the greater part of a coarse hand-made pottery vessel, P 7, described on p. 79 (fig. 3). In this part of the ditch two brooches, E 8 and 9, were found; also two of the bone gouge-shaped objects.

On the E. margin of the Inner Ditch, near Hearth i, a rounded recess, 'mm',¹ was cleared out; it had an almost flat bottom about 2.3 ft. by 2.3 ft. The sloping sides were smooth, and its depth below the surface of the rock was 2.1 ft. Nothing of importance was found. On the other side of the ditch was a rough oval hole, marked 'n' on the Plan.

To the NW. of the pavement the ditch continued in a straight line; it was very rough and gradually got shallower. On the inner side a small post-hole (or natural hole), 'p', was found, nearly square with sides 0.6 ft.; depth below the rock 1 ft.

On the same side of the ditch Hearth iii was discovered in a hole cut half-way into the rock-wall. Its bottom measured 3.6 ft. by 2 ft. (see Plan, also Sectional Diagram on the line JJ-KK). The hole was filled by an oval hearth about 3 ft. by 2 ft.—the surface at a depth of 1.37 ft. below the turf. The baked clay, which consisted of one layer only, broke up into small pieces; the top was slightly convex. It was surrounded more or less

¹ 'mm' is not so marked on the Plan, but the rounded recess is clearly indicated.



Fig. 2. Outer Ditch (Cutting III), looking NNW., showing the working of the Forest Marble rock in early Roman times, and the silting filling the V-shaped ditch. (April 1928)



Fig. 1. Inner Ditch (Cutting XIV), and SSE. entrance beyond (Cutting XVII). This photograph (looking ESE.) shows the termination of the Inner Ditch on the W. side of the SSE. entrance, some of the cobbled pavement on the entrance, and a well-preserved part of the broken-down Roman walling (in one part built over the silting of the Inner Ditch). Between the cobbles and the end of the ditch, the position of Hole 'S' is seen. (October 1929)

by a few rather small pieces of stone; under the hearth, dark ash mould to the bottom. Much Romano-British pottery was found both above and especially below the surface of the hearth; also on the bottom of the hole. It included P 23 and 24, described on p. 78.

It was in this part of the Inner Ditch that the piece of pottery of lake-village type, P 20, was found (fig. 2 and p. 78); also a bronze brooch of La Tène III type, E 11 (fig. 5), and the penannular brooch, E 12. Taken as a whole the pottery from this part of the Inner Ditch was much mixed (p. 78).

Cutting XI, Inner Ditch. This ditch is situated on the W. side of the camp between Cutting II Extension on the N. and Cutting III on the S. It varied in width from 5.9 ft. to 7.4 ft. at the top, and from 2.7 ft. to 4 ft. at the bottom. The average depth was 3.5 ft. (maximum 3.75 ft., minimum 3.15 ft.). The bottom was fairly flat throughout. The sides were 'soft' in places owing to the existence of fissures, one of which extended obliquely in the direction of Cutting XIV at a point just to the W. and under the W. end of Hearth v. The S. part of this piece of ditch beyond the S. fissure was well and evenly worked, comparatively speaking.

Hearth iv, having a diameter of 1.5 ft., was found against the inner wall of the ditch (see Plan). It sloped slightly from E. to W., and its centre was 1.85 ft. deep below the turf. It had a very thin surface of clay.

Coin 2, a *dupondius* of Hadrian, was found in this ditch, depth 1.25 ft., and Coin 3, a similar piece, at a depth of 1 ft. (p. 88). An iron fibula of La Tène III type was also found, depth 2.5 ft. The numbered pieces of pottery, P 30 (fig. 2), 31, and 32, came from this ditch (p. 81). Layers 1 and 2 produced much Romano-British pottery; the ware in Layer 3 was all of prehistoric type.

Cutting XII, Interior Space, Wall and Outer Ditch. This long cutting was made obliquely across the camp from Cutting XI to the point 'MM', the width being 5 ft.; beyond 'MM' the cutting was extended much farther for a width of 2.5 ft., but practically nothing was found in this south-eastern trial-trench.

This cutting fortunately led to the discovery of four holes, numbered from NW. to SE., 1 to 4. Working south-eastwards the rock was found to cease (that is, near the surface) a little beyond Hole 2, its place being taken by a reddish loam. The rock, however, was reached again beyond 'K', in the Outer Ditch, where it was ragged and did not lend itself to the fine tooling seen in some of the other parts of the same ditch. There was, moreover, a fissure which penetrated the counterscarp of the ditch. The ditch is seen in the Section on the line LL-MM of Plan, pl. xvi, where its dimensions can be ascertained. A few pieces of coarse pottery were found near the bottom.

Holes 1 and 2 were very near each other, the former being the smaller. At the rock-level (which was only 0.7 ft. below the turf here) Hole 1 measured 3 ft. N. and S. by 3.4 ft. E. and W. The rock bottom was found to be uneven and ragged, at a depth of 2.4 ft. below the surface. The sides were lined with slabs of stone placed nearly vertical, and they included part of a saddle quern, Q 1, described on p. 90. The filling consisted of good mould with small stones; at the bottom greyish clay, the surface of which was 1.8 ft. deep below the turf. Near the quern a bone needle, B 7, broken across the first eye, was found (p. 88), and a broad iron ring, I 4 (p. 85).

EXCAVATIONS AT KINGSDOWN CAMP

Hole 2 was nearly circular at the rock-level, having a diameter of 4.75 ft. N. and S. by 5 ft. E. and W. The bottom was 3.75 ft. N. and S. by 4.25 ft. E. and W. Average depth below the surface, 2.95 ft. ; below the rock, 2.05 ft. There was no stone lining to this hole. Below the turf mould, dark earth and stones extended to a depth of 2.25 ft. below the surface in the middle. This layer was on the tilt from SE. to NW. (that is, from 0.5 ft. below the rock-top of the hole to about 1 in. from the bottom of the hole on the NW.). Below that a seam of pure clay, 0.5 ft. thick, also on the tilt ; under this, on the E. side, a fine black silt, containing small flakes of charcoal. Pottery of Romano-British type was found half-way down in the hole ; in the lower half the pottery was of a coarser type.

Still farther to the SE. an oval depression, Hole 3, was found in the natural yellowish-brown loam, measuring about 4.25 ft. by 2.5 ft., depth below the turf 2.8 ft., depth below the surface of the loam, 1 ft. The top of the hole was covered with a highly coloured clay, about 0.25 ft. thick, which suggested the remains of a clay hearth of oval outline.

Below the clay, in the fine black ash, a few fragments of pottery were found chiefly of British type, part of a clay sling-bullet (p. 89), a piece of iron pyrites, and a number of flint flakes (see Table).

A somewhat indefinite hole, to the NW. of Hole 1, was called Hole 8. It measured 2 ft. by 1.35 ft., and its depth was 1.9 ft. Some loose stones had apparently been thrown into a rough hole in the rock. Nothing of any importance was found here.

To the SE. of Hole 3 a large hole of egg-shaped outline was found close to the line of the Inner Ditch. This was Hole 4 (see Plan and Sectional Diagram, line LL-MM), measuring at the surface 7 ft. by 5.75 ft. It proved to be a shaft or pit excavated into the yellowish-brown loam to a total depth of 8.9 ft. The bottom was slightly concave, 2.5 ft. in diameter NW. to SE., and 2.35 ft. in the opposite direction. At a depth of 5.5 ft. there was a distinct 'shoulder', where the diameters were 3.25 ft. and 2.85 ft. respectively.

There was much charcoal in the filling, but it became less as we proceeded downwards. Large slabs of Forest Marble were met with down to the 'shoulder', some lying flat, some on end, and some bearing considerable evidence of fire. Below this level there were fewer stones, the filling being of a heavy clay mixture. The finds were collected and preserved from successive layers (animal remains not noted here).

Layer 1. Surface to 1.5 ft. Much Romano-British pottery, including part of an eyelet, a few small pieces of iron slag, a bit of bronze, a small piece of bronze slag, two iron nails, two pieces of baked clay, and nine flint flakes.

Layer 2. 1.5 to 2.5 ft. Few fragments of Romano-British pottery, small pieces of iron, three flint flakes, and in bronze a small finger-ring, E 16, found at a depth of 2.25 ft., and a brooch (tinned), E 15 (fig. 5), depth 2.4 ft.

Layer 3. 2.5 ft. to 3.5 ft. One piece of Romano-British pottery, small piece of bronze slag, and a flint flake.

Layer 4. 3.5 ft. to 4.5 ft. One piece of Romano-British pottery.

Layer 5. 4.5 ft. to 5.5 ft. A few fragments of black wheel-turned pottery.

Layer 6. 5.5 ft. to 6.5 ft. A few fragments of Romano-British pottery, a small fragment of bronze plate, and bits of lignite.

Layer 7. 6.5 ft. to 7.5 ft. A few fragments of Romano-British pottery.

Layer 8. 7.5 ft. to 8.5 ft. A few pieces of Romano-British pottery, a flint flake, and a bit of bronze waste.

Layer 9. 8.5 ft. to bottom. A few small pieces of Romano-British pottery; also some burnt slabs of Forest Marble.

Between this pit and the wall we crossed what was not easily recognizable, viz. the Inner Ditch cut into the reddish-yellow loam (see Cutting XVII, p. 75). Near the wall (pl. xii, fig. 2) an infant's skeleton, M 5, was found (p. 93), and an iron fibula of La Tène III type, I 5, at a depth of 2.75 ft. below the surface.

Cutting XIV, Inner and Outer Ditches (pl. xiv, fig. 1). The position of this cutting was between Cutting III and Cutting XVII, with both of which it joined up. Most of this excavation concerned the Inner Ditch, but a 9 ft. cutting was also made through the Outer Ditch (see Section on the line PP-QQ of Plan, pl. xvi). At the rock-level this ditch had an average width at the top of 7 ft. Its nearest edge to the S. margin of the Inner Ditch, at the rock-level, was only 4.8 ft., as revealed by excavation. This cutting into the Outer Ditch was unlike any other portion of the ditch excavated; it had the usual section at the E. end with a depth of 5.5 ft., but at the W. end the depth was only 3.5 ft., as the Romans had left a mass of unexcavated rock, etc., in this position, extending outwards from the W. end of the cutting to the extent of 3 ft. Very few remains were found in this part of the Outer Ditch.

The western three-quarters of the Inner Ditch in this cutting will be best understood by reference to the Plan and the Sectional Diagram on the line NN-OO. The W. face of the cutting showed a large amount of dark mould and stones in the middle and at the top of the silting, but on the S. side the ditch was filled with reddish-brown loamy mould with large stones (on edge sometimes) which may have slipped down from an earlier bank than the Roman wall.

The largest of the hearths (no. v) was found in this part of the ditch. In this position a fissure occurred (p. 71). The ditch had been cut in the natural loam, and the silting below the hearth-level was loamy and tenacious, and contained some animal bones and charcoal, and a fair number of flint flakes, mostly very small, some of which were found on the bottom. P 35, a piece of hand-made pottery containing grains of finely pounded shell was also found on the bottom.

Hearth v was met with in Layer 2 of the silting, its summit being 1.9 ft. below the surface of the turf. It measured about 7 ft. long by 4 ft., with a convex surface 2.5 in. high; the thickness of the burnt material in the centre was about 2 in. The clay surface was mixed with mould and black ash, and a little charcoal and burnt bone was collected. A few fragments of pottery were pressed into the surface, including one with cross-hatching; also some slabs of Forest Marble, which had probably fallen from the wall.

In this part of the Inner Ditch and for a distance of about 38 ft. it was found that the Roman wall was built overlapping the silting to a slight extent on the west, but gradually increasing towards the east, where the inner face of the wall extended very

considerably (thickness 3.3 ft.) over the earlier Inner Ditch. This is well seen in the Section on the line PP-QQ of Plan, pl. xvi, and in pl. xiv, fig. 1. The Romans finding the ground soft had in places carried their courses of dry-stone walling down to a level only 2.25 ft. above the bottom of the Inner Ditch. In excavating for the S. margin of the Inner Ditch under the wall, it was found that the wall was well built in more or less regular courses on the inner side, the outer face had only one or two supporting courses remaining, and the body of the wall consisted of a loose filling of stones, generally small, and a fair amount of dark mould—possibly some of it decayed turf thrown up with the stones.

At the E. end of Cutting XIV the termination (somewhat squared) of the stone-cut Inner Ditch was reached (pl. xiv, fig. 1), indicating the probability that there existed in this position and to the east a southern entrance into the camp of earlier date than the Roman entrance on the NE. Later this was proved to be the case.

Cutting XIV produced a good deal of Romano-British pottery in the upper layers, and a few pieces of British type near the bottom. The interesting piece of red Samian pottery (P 33 and 38) was found in this area (fig. 2, and p. 80), and P 36, a pedestal base (fig. 4). In bronze two brooches, E 23 and E 29, were found (the former illustrated in fig. 5); also tweezers, complete, E 31 (fig. 6).

Cutting XV, Inner Ditch (pl. xiii, fig. 2). This cutting comprised Inner Ditch only, along the E. side of the camp between and joining up with Cutting V and Cutting XVII. This ditch at the rock-level varied in width from 4.5 ft. to 7 ft. at the top, and from 2.4 ft. to 4.8 ft. at the bottom. In depth below the surface it varied from 2.85 ft. to 4.2 ft. Hearth vi was found at a depth of 1.85 ft. below the turf; it was circular, with a diameter of 1.85 ft.; the surface sloped towards the west, and was fairly covered with charcoal, which was traced to the bottom of the ditch in this position.

The ditch had a rather flat bottom in places; the walls were rough, especially on the E. side.

It was in this section of the Inner Ditch that the group of skeletons of five infants was found, commented upon elsewhere (p. 93).

A large amount of fragments of Roman and Romano-British pottery was found in the upper two layers, including a few pieces of red Samian, and a somewhat ruder ware of British type below.

But the most important finds were the two currency-bars, I 9 and I 13, and the British coin (Coin 4); all these are fully described on pp. 86-8, and figs. 6, 8. Three bronze brooches, E 21, 22, and 27, were also found, all of which are here illustrated (fig. 5, and p. 82), and bronze tweezers, E 33, damaged (p. 84). In iron a spud, I 8, and a horse's bit, I 11, were found, and they are represented in fig. 7 (p. 86); also the 'cheek-piece', H 6 (fig. 9, and p. 88).

Cutting XVI, Interior Space. This completed the trenching in the Interior Space, the other areas being Cuttings, IV, VIII, and XII, already described. This trenching is represented by the faintly dotted area on the Plan, pl. xv. In the N. part it produced little and revealed no pits; the depth of the surface of the rock varied from 0.35 ft.

to 0.6 ft. here. Working towards the SE. the rock was deeper, averaging 0.8 ft., and occasionally loose holes in the rock were uncovered, maximum depth 2 ft.

A large amount of Roman and Romano-British pottery was found in the trenching, mostly in small fragments, but some of the pieces of grey pottery were larger. Nearly all of it was much weathered, owing apparently to exposure on the surface for a long period. A penannular brooch, E 17, and a bronze brooch, E 41, were found here (figs. 5; 6, and pp. 81, 82).

Hole 5 was 3 ft. long at rock-level and 1.47 ft. in width; depth below rock, 1.3 ft.; fairly flat bottom, rather smaller than at top. Four fragments of pottery, P 39, found in this hole, are commented upon on p. 76 (fig. 2).

Hole 6, irregular in outline like no. 5, 2.35 ft. by 1.7 ft.; depth below rock-level 0.75 ft., bottom slightly concave. Only one flint flake was found.

Hole 7 was a well-cut circular post-hole, containing no remains; diameter at the top 1.8 ft., at bottom (flat) 0.8 ft.; depth below rock-level 1.35 ft.; lower 6 inches of sides nearly vertical. Eight packing-stones in the hole.

Cutting XVII, Inner and Outer Ditches and Southern Entrance. This cutting on the E. and SE. of the camp extended from Cutting XIV on the west, across the ancient entrance to Cutting XV. The dimensions of the Inner Ditch on the SE. are best estimated by reference to the Sectional Diagrams on the lines TT-UU and WW-XX of Plan, pl. xv. The longitudinal section on the line RR-SS shows much that is structurally interesting in this part of the camp.

In this cutting it was ascertained that the ancient Entrance was about 28.25 ft. wide; the W. part was represented by rock, but the greater part on the E. on the level of the Entrance consisted of natural loam. In the middle of the Entrance, part of a pavement of cobble-stones was found, extending northwards from the wall a distance of 16.25 ft.; the maximum width of the part examined was 4 ft. These stones were from 0.25 ft. to 0.7 ft. in length, and were laid three deep including overlaps; several of them were burnt. The cobbles extended under the Roman wall to the extent of 1 ft., and in this position some hand-made pottery, P 43, was found (p. 80). The cobbles rested in a slight concavity, maximum depth 4.5 in., which sloped up each way, E. and W., to the level of the undisturbed loam.

Hole 's' was found between the cobbles and the E. end of Cutting XIV. It was nearly circular in plan, maximum diameter at the rock-level 2.43 ft.; depth into rock 0.9 ft.; basin-shaped; several small slabs of stone round the margin, two of which still stood on end. In this part two interesting bronze brooches, E 37 and 38, were found close to the wall (fig. 5, and pp. 81, 82).

On a line with the cobble-stones, the inner margin of the Outer Ditch was traced, and farther east a cutting, 5 ft. wide, was made across the Outer Ditch. Here some pottery, P 40, was found. It is described on p. 78.

Here the Outer Ditch was found to be 6.7 ft. in depth, with flat bottom varying from 0.9 ft. to 1.1 ft. in width. The lower 3 ft. of this part of the ditch was particularly well cut.

On the E. side of the S. Entrance, owing to the absence of solid rock it was very difficult to trace the Inner Ditch cut into the reddish loam, but one got used to the

conditions, and the sides of the ditch were ultimately traced satisfactorily. The fact that shards of pottery, bones, etc., were being constantly found helped greatly in this work. As seen by the Sections previously referred to, the Inner Ditch was very shallow in this part. Cut into the bottom of this piece of ditch, Hole 't', flat bottomed, was found on the inner side. At the bottom of the ditch its diameter was 1.6 ft., depth 0.5 ft.; sides almost vertical. Round the sides there was a lining consisting of nine small slabs of Forest Marble. In the hole a few fragments of pottery and a little slag were found. In this part of the ditch, pottery (Romano-British) was not collected in any considerable quantity.

THE POTTERY

The shards of pottery discovered were numerous,¹ but insufficient fragments of any pot were found to complete a single vessel. A large proportion of the shards was much weathered, especially those uncovered in the Interior Space; such fragments had no doubt been exposed on the surface for a number of years. Ornamental pottery was not plentiful.

(a) INTERIOR SPACE

In the Interior Space little earthenware of interest was found, and only one piece of red Samian. Most of the pottery was the common thin and thick grey Romano-British ware, with very few fragments which could possibly be regarded as being of prehistoric date. Among the rudest pieces of hand-made pottery was P 9, which included parts of a flat-rimmed vessel which might be compared with the rim-piece P 10, found on the bottom of the Inner Ditch.

In this area the most interesting find of pottery (P 39) came from Hole 5 at a depth of 0.75 ft. below the surface. The four fragments consist of two extremely coarse pieces which, had they been found elsewhere and alone, might, by some archaeologists, be regarded as being of prehistoric date, but with them were two pieces of black fine-grained Romano-British pottery, one fragment of rim being ornamented with a double zigzag pattern (fig. 2). Coarse ware of the same description as that mentioned above was frequently found in the Romano-British villages excavated by Pitt-Rivers, associated with pottery of a definite Roman *facies*, and the same remark applies to the ruder types of pottery found on Ham Hill, Somerset, and elsewhere.

(b) OUTER DITCH

The pottery found in the 70 feet of Outer Ditch which we examined was all Roman or Romano-British,² and pottery of the early Roman period was collected from the lower strata in the silting, including several fragments found on the rock bottom.

¹ The pottery has been preserved in brown-paper bags duly labelled according to the cutting and the layer; all of it has been washed. All the pottery in the camp was much broken up, and fragments of the same vessel were often scattered.

² The Roman and Romano-British pottery from Kingsdown Camp compares very favourably, in fact very closely, with that found in making trial-excavations on 5th-6th March 1928 on a Roman site in an arable field about 200 yards E. of the Beeches, on Mells Down (forming part of the same farm as Kingsdown Camp). The latter place produced a small piece of hard New Forest ware—a type not met with at the camp.

In the Outer Ditch in Cutting I, a disc of coarse grey pottery (P 1), Romano-British, was found at a depth of 5 ft., and in the fissure below the true bottom of the ditch a small piece of imitation Samian (P 3), at a depth of 7 ft. below the surface. No pottery was found in the Outer Ditch, Cutting II.



Fig. 2. Pottery (see pp. 76, 78, 80, 81). (1)

In the same ditch in Cutting III, at the SW. corner of the camp, at a depth of 4.5 ft., part of a flat base and triangular (in section) foot-stand of red Samian pottery (P 14), having a good dull red glaze and of good fabric, was found. It is of Form 18, and probably pre-Flavian.

P 15 was an even more important find, the ware lying on the solid rock bottom of the Outer Ditch in Cutting III. Here a fragment of red Samian pottery was discovered associated with three fragments of thin dark grey Roman pottery. Dr. T. Davies Pryce, F.S.A., reports of this piece of *terra sigillata*: 'Form 15/17, good glaze and fabric; pre-Flavian. The glaze is less brilliant than that usually found in the Nero-Vespasian period. External to the quarter-round moulding, the vessel is bevelled, not fluted. This characteristic is seen on many Claudian examples at Hofheim and Aislingen. Fluting

in this situation occurs also in the Claudian period, and is frequently met with in the Flavian period.' If we could date this fragment precisely, then we should know the *exact* date of the Outer Ditch.

In Cutting XVII, Outer Ditch, single Romano-British shards (P 40), plain, were found at 4.5 ft. and 5.5 ft. below the surface, and also on the bottom at 6.7 ft. Cuttings V, XII, and XIV also produced Roman and Romano-British pottery, but nothing of earlier date.

(c) INNER DITCH

From the Inner Ditch we have a large quantity of pottery, and it was more plentiful in Layers 1 and 2 of Cutting XI than elsewhere.¹ Cutting XV produced nearly as much, and included a piece of a thin bowl of brown ware, Roman, ornamented with a wide band of small incisions (not continuous), arranged diagonally.

In nearly all the cuttings, for the purposes of classification of pottery, etc., the silting was divided into three parts: Layer 1, from surface to 1.5 ft.; Layer 2, from 1.6 ft. to 2.5 ft.; and Layer 3, from 2.6 ft. to the bottom.²

As we have stated before the Inner Ditch had an average depth of 3.65 ft., but in some places, especially on the north between the Roman Entrance and Cutting II, the ditch got shallower as the excavations proceeded westward. Consequently the pottery, etc., discovered there (and there was a good deal) was, in taking our layers into consideration, considerably mixed, and definite Roman pottery and rough ware of earlier type if not of earlier date (such as P 17, 18, 19, 21, and 26) were constantly being turned up together, especially in Layers 1 and 2. This part of the ditch for dating purposes, therefore, was perhaps of less value than most other parts. It should be remarked, however, that all the pottery found in Layer 3 (Cutting V) was of British *facies*.

P 20 (fig. 2), found 2 in. above the rock bottom of Cutting V, must be mentioned, for this rim-piece, ornamented with a wide band of cross-hatching with a double curve below, is the only fragment recovered in the camp which can be compared with a typical and common ornament found in the Somerset Lake-villages, Cadbury Castle, etc. Then, at a depth of 1 ft., a piece of base of Samian pottery (P 22) was found. It is of Form 18 with triangular (in section) foot-stand; Flavian, probably Vespasianic. On the south side of the northern section of the Inner Ditch and close to Hearth iii, a piece of a Samian bowl (P 23) of pre-Flavian type, Form 18, was found associated with a rim-piece of black pottery of prehistoric type, but probably of early Romano-British date. Near the hearth also several fragments of a thin lathe-turned vessel of soft brick-red pottery (P 24), the base measuring $3\frac{1}{2}$ in. in diameter, Romano-British, were found at a depth of 1.7 ft. Seventy-three fragments of similar pottery, red all through and rather thin, were found in various parts of the camp.

Near Hearth i, at a depth of from 2.5 ft. to 3 ft., and a little below the level of the

¹ In Layer 1, the pottery included three fragments of red Samian, half an eyelet or loop, and two small discs of pottery (probably for games).

² On the S. side (Cutting XIV) where the Inner Ditch reached a maximum depth of 5.3 ft., Layer 3 included from 2.6 ft. to 3.5 ft., and Layer 4 was introduced to cover the interval extending from 3.6 ft. to the bottom.

hearth's surface, the greater part of a hand-made vessel (height 5 in.) of coarse brown ware (P 6) was found having a good proportion of pounded shell in its composition

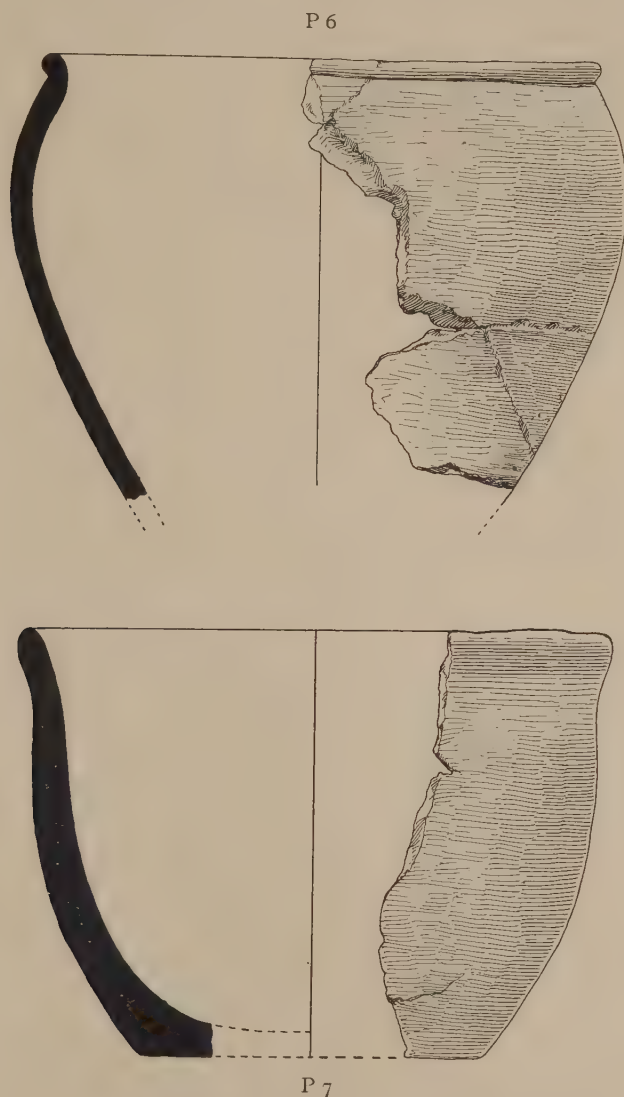


Fig. 3. Two pottery vessels found in the Inner Ditch. ($\frac{1}{2}$)

(fig. 3). It is pre-Roman in type, and is a vessel which should help in the precise dating of the Inner Ditch.

In the ditch on the N. side of the camp, part of an interesting hand-made pot of brown ware (P 6) was found at a depth of 1.75 ft. (fig. 3) The surface shows signs of tooling, and the vessel has a pronounced bead rim.

At a depth of 2.2 ft. in Cutting III, where objects of Roman date extended rather

deep,¹ about a dozen fragments of grey pottery (P 8) of Romano-British fabric were found, three of the pieces having small perforations, but they do not appear to be rivet-holes.

In the same part of the ditch at depths of from 3.25 ft. to the bottom at 3.85 ft., several fragments of hand-made pottery (P 10 to 13) containing a large amount of pounded

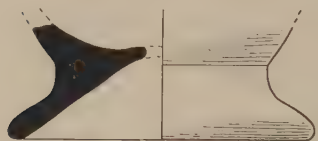


Fig. 4. P 36. Pedestal base, found in the Inner Ditch. ($\frac{1}{2}$)

shell, are apparently of the period of the construction of the Inner Ditch, or rather of the date when the ditch was allowed to silt up. Some of the coarsest of this hand-made ware (P 44) was found in the deepest part of the Inner Ditch in Cutting XIV, Layer 4. There is apparently no reason for regarding these shards as being of earlier date than the two currency-bars and the iron dagger found in exactly the same relative position.

Among the rudest pottery (P 29) is that found on the undisturbed rock on the top of the inner side of the Outer Ditch, Cutting XII, SE. corner of the camp, under the old turf line and apparently just below the level of the Roman wall. It must have been in that position before the wall was built, and is of the period of the Inner Ditch. An early kind of hand-made pottery (P 43) was also found under the Roman wall close to the cobbled pavement in the south Entrance-way, some of the pieces coming from among and under the cobbles.

The most interesting piece of ornamented red Samian pottery found in the Inner Ditch was P 33. It came from Cutting XIV, depth 1.75 ft. Later, in Cutting XVII, depth 1.6 ft., at a distance of some 53 ft. from P 33, another piece of the same vessel (P 38) was discovered, and they are shown in fig. 2 side by side to indicate their connexion. Dr. Davies Pryce has kindly given the following description of the pieces: 'Form 29. Dull orange-yellow glaze, as frequently found in Lezoux ware of the early period (c. A. D. 30-75). The decoration of the upper frieze is composed of a scroll and a straight wreath of repeated, serrated leaves. A bead-row intervenes. This schematic arrangement is not infrequently met with on the upper frieze of Form 29, in the early period of Lezoux. The funnel-shaped leaf of the upper scroll, together with the projecting tendril and small leaf, have evidently been inspired by closely similar *motifs* on Italic (Arretine) ware. The plain central moulding is bordered above and below by blurred bead-rows. The upright leaf of the lower frieze probably forms part of a continuous scroll. The contour of the vessel approaches the hemispherical, but the rim is everted. The style of decoration closely resembles that of the early Lezoux potter, ATEPOMARVS. The period of the bowl is certainly pre-Flavian, and should probably be assigned to the decade A. D. 50-60.'

The coins of Domitian and Hadrian were found in Layer 1, whereas this Samian pottery came from Layer 2, which is what one would expect.

The Inner Ditch also produced part of the wall and rounded lip of a red Samian pot found at a depth of 1.15 ft. Form 18; period, Nero-Vespasian.

Other fragments of pottery worthy of mention are the pedestal base (P 36), fig. 4,

¹ Brooch E 10 was found here at a depth of 2.25 ft. Occasionally Romano-British pottery (like P 42) was found deeper than one would expect. This was no doubt due to digging into the silting in the Roman period at such times as the infants were interred, for instance.

depth 1.5 ft.; a fragment of black pottery (P 32), broken across a large perforation 19 mm. in diameter, depth 2 ft.; a bead rim (P 30), fig. 2, with a row of slight finger-tip impressions with finger-nail indentations, depth 1.25 ft.; another bead-rim (P 45) found in Layer 3, Cutting XIV (depth 2.6 ft. to 3.5 ft.); and the foot-stand of a red Samian cup (P 46), found in Layer 1 of Cutting XV.¹

Lastly, there is P 31, rather more than half the rim of a thin lathe-turned *olla*, of fine black pottery with out-bent rim and gracefully moulded neck with high shoulder. The bulge of the vessel is somewhat more exaggerated than is usual in this type. There is a slightly hollowed groove where the shoulder joins the neck. This vessel is apparently of the Claudian-Nero period, and it *may* have been imported. It was found near the small Hearth iv, 2 ft. below the surface.

BROOCHES

One of the most interesting features in the exploration of this small camp is the discovery of a large number of brooches. No brooches were discovered in the Outer Ditch. Two were revealed in trenching in the Interior Space (maximum depth 0.75 ft.), two were found touching the inner face of the Roman wall on the south side of the camp (maximum depth 1.25 ft.), and the remainder came from the Inner Ditch—all in Layer 1 between 0.7 ft. and 1.5 ft., except two (one being at a depth of 1.75 ft., the other, E 10, being found 2.25 ft. below the surface in a part of the Inner Ditch which was at least 3.8 ft. deep). The collection comprises seventeen bronze brooches (or parts), and two of iron; and in addition four bronze pins of brooches and part of a coiled spring. Five of the brooches (E 15, 21, 23, 38, 41) show clear traces of having been tinned. Two penannular brooches of bronze were also found; they came from the unimportant depth of 0.5 ft. One of them (E 17) is illustrated in fig. 6. This number (twenty-six) is out of all proportion to the other antiquities discovered in this small camp. Probably it is a record, so far as scattered specimens are concerned: there may of course be hoards of brooches exceeding that number. The large number of brooches, too, is perhaps another proof of the presence of women in this small habitation of the early Roman period (that is, assuming the women wore more brooches than the men).

The collection includes the very fine enamelled brooch, E 5, found in the Inner Ditch, depth 1.25 ft., at a point where the ditch reached a depth of 3.55 ft. This magnificent specimen of T-shaped type is apparently of the latter half of the first century (fig. 5). Its length is $1\frac{1}{16}$ in., and it is very solid and heavy; it is highly patinated and of a rich green colour. The top of the bow is ornamented with a line of four lozenge-shaped depressions which originally contained enamel of an orange colour; the field is filled with red enamel. There are two deep rounded holes at the summit of the bow which probably contained coral or precious stones. The catch-plate is ornamented with three dots-and-circles,² and fine engraving occurs in various places. The spiral spring is

¹ It is of good texture with brownish-red glaze (Form 27). On the external surface is a circular groove which is characteristic of the first-century examples of this form. Dr. T. D. Pryce says it should be assigned to the Nero-Vespasian period, c. A. D. 55-80 (cf. Oswald and Pryce, *Terra Sigillata*, xlix, 1-10, 13).

² Not seen in the drawing.

bilateral and consists of six coils on either side of the pin, covered by a semicircular casing having closed ends, with a chord across the back caught up by a loop attached to the head of the bow.

Like six other of the brooches this specimen has a moulded enlargement at the tail, in this specimen very much pronounced. In the others this type of finish resembles several of the brooches found on Hod Hill. But the tails of most of the brooches (eight) are comparatively sharp, the bow of the brooch gradually tapering from the head; this is a first-century characteristic.

Another feature of the brooches worthy of observation is the openings in the catch-plate—a reminiscence of the openwork seen on the more purely British specimens of La Tène and early Roman date. Four of the brooches have small single perforations in this position (E 2 and E 3, 22, 23, fig. 5). Several of the early Roman brooches from Hod Hill in the British Museum exhibit this feature. Another specimen comes from Congresbury (Taunton Museum), one was found in the amphitheatre¹ and another in the legionary fortress² at Caerleon. Two holes are seen in this position in the perfect brooch from Kingsdown, E 37 (fig. 5), but two holes are not common. There are, however, three brooches with coiled springs developed from La Tène III type, having two holes each, in the Ashmolean Museum, which were found at Wood Eaton. Other single examples from Mildenhall, Colchester, Farley Heath, and one in the Ransom collection may be seen in the British Museum.

The brooch, E 10 (fig. 5), from Kingsdown, of the middle of the first century, has three oblong holes in the catch-plate. Single brooches having this feature have been found at Ham Hill, Allington (Kent), Richborough, Jordan Hill, etc.³

Another brooch, E 41 (fig. 5), found near the surface in the enclosed area, depth 0.7 ft., has a large triangular opening in the catch-plate.

The small brooch, E 21 (found in the Inner Ditch, depth 1 ft.), with transverse mouldings and lateral projections is of particular interest, because it is of typical Hod Hill character, and may be dated A.D. 40–50 (fig. 5). E 8, although broken, is similar. Several of these brooches may be seen in the Durden collection in the British Museum, and there are at least three brooches of this type in Taunton Museum found on Ham Hill. They have also turned up at Combe Down (Bath), Rotherley, Colchester, etc.

E 1, E 27 (fig. 5), and E 29 have the very flat 'south-western' type of bow, ornamented with simple longitudinal punctured grooves, similar in form and ornament to some of the first-century brooches found on Hod Hill and Ham Hill, and in the Pitt-Rivers excavations at Woodcuts, Rotherley, and Woodyates (see *Excavations in Cranborne Chase*).

Another type has a shouldered or notched bow, and there are three specimens, E 3, E 22, and E 41 (fig. 5). These are of T-shape, as also are the enamelled brooch (E 5) and the one having two holes in the catch-plate (E 37).

¹ *Archaeologia*, lxxviii, 163, fig. 13, no. 10.

² *Arch. Cambr.*, lxxxiv, 256, no. 2. Two found in London are figured in the *London Museum Catalogue*, no. 3 (1930) fig. 24, no. 4 and fig. 28, no. 23.

³ A brooch having four small circular holes in the catch-plate was found in the bed of the Walbrook, London (*London Museum Catalogue*, no. 3, fig. 24, no. 3).

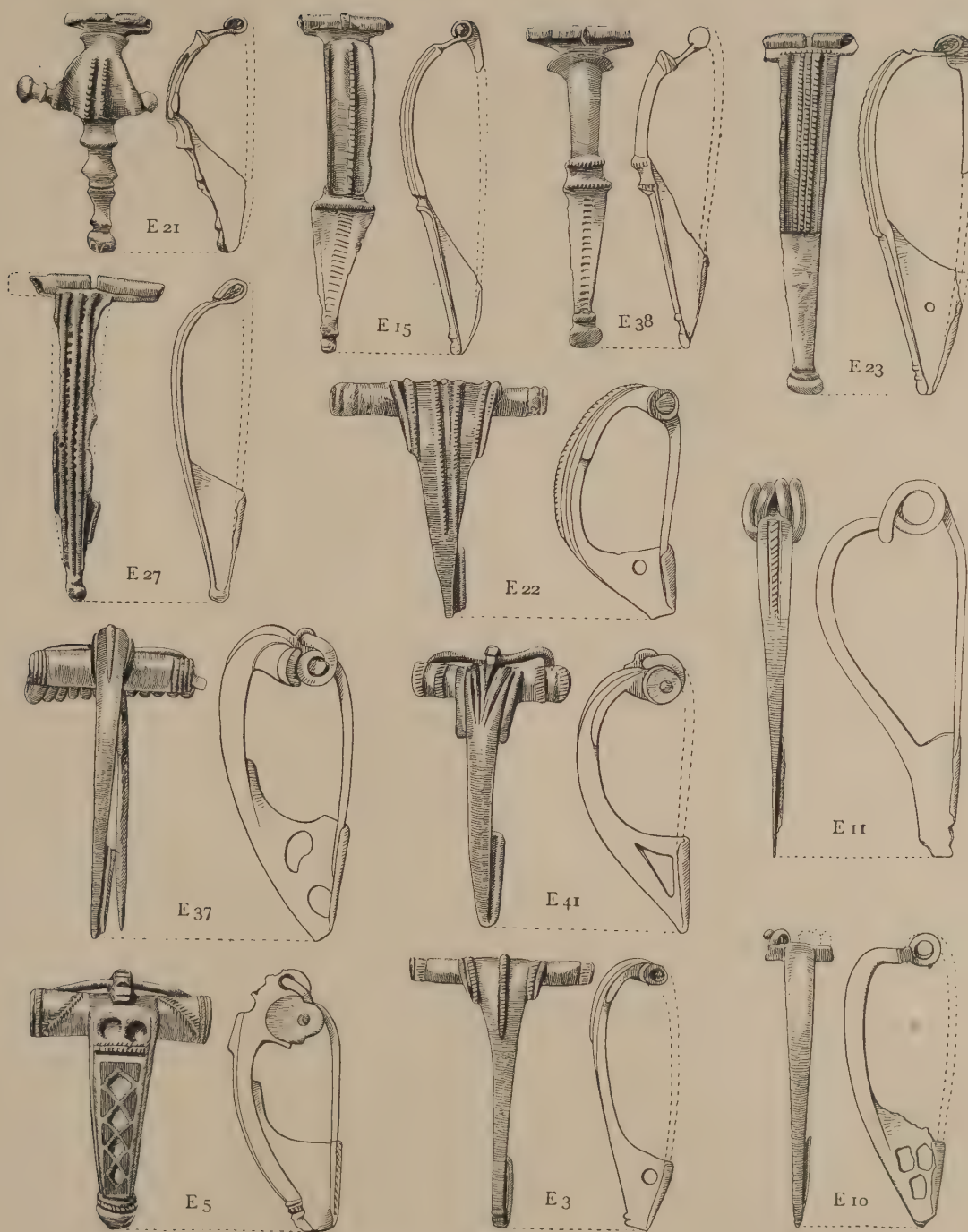


Fig. 5. Bronze brooches (see pp. 8 ff.). (1)

Lastly, there are three examples (one bronze, two iron) of La Tène III type (E 11, I 5, and I 6), which date probably as late as the Flavian period. For E 11, see fig. 5.

BRONZE (other than Brooches)

It is rather surprising that apart from the numerous brooches so few bronze objects were found, and some of these are unworthy of record here.

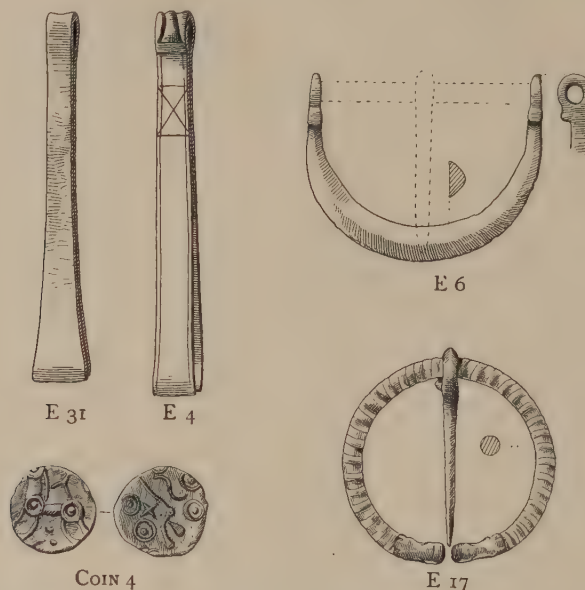


Fig. 6. Bronze objects and Ancient British coin (see *pp.* 81, 84, 87). (7)

Bronze wire (E 18, 35, 36), both fine and thick (uneven strand), was found in the Inner Ditch in Layer 1, no doubt of Roman date.

There are two finger-rings, viz. a small wire ring (E 16) found at the top of Hole 4, Cutting XII, depth 2.25 ft., and a plain ring (E 25) of plano-convex cross-section found in the Inner Ditch, depth 1.6 ft. A small piece of a bracelet (E 32) came from a depth of 1.15 ft. in the Inner Ditch.

A small carrying-handle, E 6, with a loop at either end, for camp-kettle or *situla* (fig. 6), was thrown out of the Inner Ditch, Cutting V, before it was noticed, but its approximate depth was 1 ft.

The list is completed by the record of three pairs of tweezers (E 4, 31, and 33), two of them in perfect condition. E 4, length $2\frac{1}{4}$ in., was found on the Roman entrance-way, Cutting V, depth 1 ft. (fig. 6). It has finely engraved line ornament on the 'blades', and the ring-end is ornamented with the lip-ornament which had its origin in the Pre-historic Iron Age. Another, E 31 (fig. 6), plain, $2\frac{1}{8}$ in. in length, was found in the Inner Ditch, depth 1.25 ft. One of the arms of the tweezers, E 33, is damaged; the ornament consists of transverse lines and tiny notches along the edges. Found in filling in the Inner Ditch, Cutting XV.

IRON

In iron, in addition to the two currency-bars and the two fibulae, several objects of interest were found. The most attractive is the dagger (I 1) with plain blade, not ribbed nor corrugated (fig. 7). The greater part of the blade and tang remain, measuring



Fig. 7. Iron objects (see pp. 85-6) (about $\frac{1}{2}$)

together $7\frac{3}{8}$ in. in length. The base of the blade is neatly finished with a bronze mount or guard (width 34 mm.). It was found in the middle of the Inner Ditch (Cutting II Extension) at a depth of 2.75 ft., and only an inch above the bottom, on a seam of fine silt. No part of the perishable grip of the handle was traced. The arched outline of the mouth of the scabbard—a persistent feature of the La Tène II period—is here represented by the bronze 'guard' which completes the base of this dagger.

A short sword, with arched guard of bronze, was found at Edenderry, Ireland (Murray collection, Cambridge Museum), and is similar to specimens from Lisnacrogghera in the British Museum. A similar arched guard of iron is seen on a rapier dredged from the river Wissey (tributary of the Ouse), near Stoke Ferry, Norfolk (Cambridge Museum). The tang and blade of iron daggers found at Hunsbury Camp (Northampton Museum), Ham Hill (Taunton Museum) and in the Glastonbury Lake Village are divided by a similar curved ridge.

I 4 is a wide band or ring, measuring $3\frac{1}{2}$ in. by 3 in., which was found in the middle of Hole 1, Cutting XII, Interior Space, embedded in clay, depth 2 ft. below the surface.

EXCAVATIONS AT KINGSDOWN CAMP

Other objects of iron, listed below, were all found in the Inner Ditch :

I 2. A small chisel, or awl, length 77 mm. Depth 0.75 ft.

I 7. Small tanged single-edged knife, of a short and broad type (fig. 7). Depth 1 ft.

I 8. Socketed spud, possibly the butt-end of the shaft of a spear (fig. 7). Depth 1.6 ft.

Similar spuds were found by Pitt-Rivers at Woodcuts.

I 11. Horse's bit, straight, with a loop at either end ; made from a rather thin strand of iron closely twisted (fig. 7). Depth 1.6 ft. A similar specimen comes from Ham Hill.

I 12. Bar of circular section, length 13½ in., with a small knob at one end ; the other end has been fractured across a hole. Depth 1.6 ft.

Forty-six pieces of iron slag were found in the camp and preserved, as shown in the annexed table. A few other pieces were reburied.

Distribution of Pieces of Iron Slag, Kingsdown Camp

<i>No. of Cutting.</i>	<i>Division of Cutting.</i>	<i>Layer.¹</i>	<i>No. of Pieces.</i>	<i>Remarks.</i>
I.	Outer Ditch ²	3	2	—
II.	Inner Ditch	2	4	One of the pieces, large.
III.	"	2	2	—
V.	"	3	1	—
XI.	"	1	3	One small.
"	"	3	2	One small, one large.
XIV.	"	1	3	Two small, one large.
"	"	2	1	Small.
"	"	2-3	1	—
XV.	"	1	9	Small pieces.
"	"	2	3	Two small, one large.
"	"	3	2	—
XVI.	Trenching	—	9	Mostly small ; one very large.
XVII.	Inner Ditch	2	4	Two small, two larger. There were also several very small pieces in Layer 1.
			46	

CURRENCY

Comparatively early in the work of excavation three Roman coins were found in the western section of the Inner Ditch, but it was not until the digging was resumed in 1929 that the eastern section of this ditch (Cutting XV) was excavated, and revealed an ancient British coin (fig. 6) and two currency-bars (fig. 8). We were very fortunate in getting these three classes of currency in this little camp.

A large number of currency-bars (sometimes in hoards) have been discovered south of the Midlands, but previously in Somerset they had been found at three ancient sites only.³ This medium of exchange, it is important to note, was in use at the time of Caesar's invasion, and was called by him *taleae ferreae* (*Bell. Gall.*, v, 12).⁴

¹ Layer 1, surface to 1.5 ft. ; Layer 2, 1.6 ft. to 2.5 ft. ; Layer 3, 2.6 ft. to bottom.

² There were also a few pieces in Layer 1, and one or two in Layer 2, but they were reburied.

³ Bulleid and Gray, *Glastonbury Lake Village*, ii, 399-400.

⁴ *Proc. Soc. Antiq. Lond.*, xx, 179-95.

The following is a description of the two specimens :

I 9. Currency-bar of iron, of slender proportions, broken somewhat and now restored. Length $28\frac{5}{8}$ in., including the length of the hammered-over 'handle', $1\frac{7}{16}$ in.; maximum width at 'handle' 19.5 mm. ($\frac{3}{4}$ in.). Present weight 164.4 grammes. Found about an inch above the true bottom of the ditch.

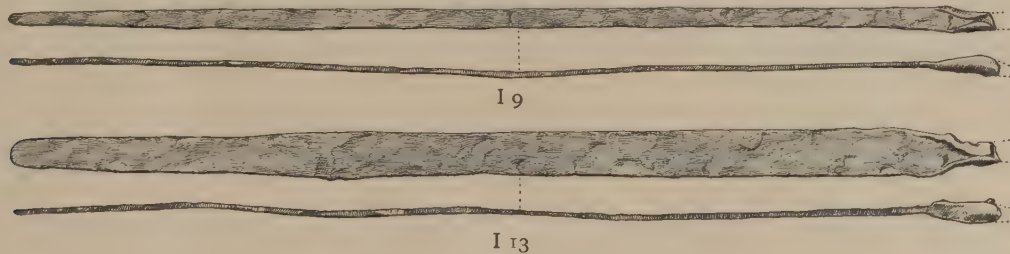


Fig. 8. Iron Currency-bars. ($\frac{1}{5}$)

I 13. Currency-bar of iron, broken a little (now restored). Length $28\frac{3}{4}$ in., including the remaining length of the hammered-over 'handle', 2 in.; maximum width of the blade just above the 'handle', $1\frac{7}{16}$ in. The 'handle' end appears to have been broken off, and may have been nearly an inch longer. The pointed end is apparently complete. Present weight 399.4 grammes. Found at a depth of 3.7 ft. below the surface in loamy silting near the bottom of the ditch.

Previously currency-bars had been found in Somerset at Glastonbury Lake Village (*unit* and *double weight* bars), in Wookey Hole (*unit*, *half-unit*, and *quarter-unit*), and on Ham Hill (several specimens of *double weight* bars). As the presumed standard of the *unit* bar is 4,770 grains (309 grammes), based on the Neath weight and one or two others, it would appear that I 13 from Kingsdown, weighing 399.4 grammes, is a much-corroded specimen of $1\frac{1}{2}$ -*unit*, 464 grammes, like some of the bars from Salmonsbury Camp, Bourton-on-the-Water, Glos.

The other bar from Kingsdown, I 9, found at the bottom of the ditch, weighs 164.4 grammes, and is no doubt intended for a *half-unit* bar, the standard being 155 grammes. The additional 9.5 grammes may partly be accounted for in the weight of material used in restoring the bar. In the Taunton Museum there is a leaden weight from Charterhouse-on-Mendip weighing 159 grammes. A large number of the currency-bars found on Meon Hill, Glos., in 1824, are of this denomination. Various specimens still exist, including four to be seen in the Ashmolean Museum, which now vary in weight from 137.2 to 172.1 grammes.

The ancient British uninscribed coin (Coin 4, fig. 6) was found in the same part of the ditch, at a depth of 1.35 ft. (that is an average of some 2 ft. above the level of the currency-bars). This bronze coin is dished; maximum diameter 12 mm.; weight 10.65 grains. It was seen at once to be of the 'Nunney type', and the discovery of our specimen was all the more interesting owing to the fact that the Nunney hoard was found only four miles south of Kingsdown, on West Down Farm, near Holwell, parish of Nunney. Of Types 7 and 8, pl. F of *Evans*, about 180 coins were included in the

Nunney hoard.¹ They varied in weight, it is stated, from 13 to 21.5 grains; average weight 18.25 grains. It should be noted that our specimen, although only 10.65 grains, is in perfect condition. Taunton Museum also owns an inscribed coin of Antedrigus from the Nunney hoard, weight 18.5 grains.

Sir John Evans states that the coins found at Nunney were deposited after the beginning of the reign of Claudius I, or subsequently to A.D. 41. With the hoard were found a few denarii including one of Caligula, and several bronze coins of Claudius and Antonia. As the coins of Antonia were struck by Claudius, it is probable that the Nunney hoard was deposited during the wars with the Romans when Ostorius Scapula was in command, c. A.D. 50, or a little later.

The three Roman coins were found in the western part of the Inner Ditch, and include an *as* of Domitian, found at a depth of 1 ft. This 'second brass' copper coin was struck in A.D. 86, having the *Moneta Augusti* reverse.²

Coin 2 was found at a depth of 1.25 ft. This *dupondius* of Hadrian, having the *Tellus Stabul.* reverse, was struck c. A.D. 133-5.

Coin 3, also a *dupondius* of Hadrian, in a bad state of preservation, was also found at a depth of 1 ft. The reverse represents Pallas fighting.

It will be noted that the depth of the four coins varies only to the extent of 0.35 ft. The coins of Hadrian must have been well worn before they found a resting-place fairly high up in the silting of the Inner Ditch.

BONE AND ANTLER

In bone there is a needle, B 7, about 3 in. long, with a second eye; the butt-end shows indications of a former eye. It was found at a depth of 1.75 ft., close to the side of Hole 1, Cutting XII, in the Interior Space.

No less than seven pointed bone implements, cut from the tibiae of sheep or goats, were found at depths varying from 1.1 ft. to 3 ft. in the Inner Ditch. Two of them (B 1 and B 5) are illustrated in fig. 9. This class of 'gouge-shaped' tool is described in the *Glastonbury Lake Village* volumes, where references to some similar finds are given. Sixty-seven specimens were found in the Glastonbury Lake Village, and more are being turned up at Meare. Owing probably to fracture at the proximal end only one of the Kingsdown examples has a perforation (rivet-hole) remaining.

Two worked tibiae of horse (B 9 and B 11), sawn, notched, and perforated, but both much damaged, were found in the Inner Ditch, depth 2 ft. and 2.25 ft. respectively. They are of the class frequently found in the lake-villages, but their purpose is problematical.

Turning to worked pieces of red-deer antler, there are two articles of interest. One, H 6, is a worked tine of the 'cheek-piece' family (fig. 9), but not typical of those found in some numbers in the lake-villages. It is unusually wide, and has a flat oval cross-section. On the line of the least diameter there is a large oblong hole, and near the larger end a circular perforation in the same direction. The long oblong hole brings to mind the somewhat similar objects found in Heathery Burn Cave (British Museum).

¹ Two of them are engraved in the *Numis. Chron.*, i, plate 1, 13 and 14.

² Mattingly and Sydenham, no. 335.

A well-worn object, H 1, made from the base of an antler of red-deer, is sawn across the shaft and hollowed out; at the burr-end it is highly polished (fig. 9). It was found in the Inner Ditch, Cutting V, at a depth of 2 ft. Mr. Reginald A. Smith, F.S.A., has pointed out that this object may be a money-box or purse used as a receptacle for coins (presumably of Roman date). In the British Museum a similar but very ornate specimen is exhibited, which was found in the neighbourhood of Grüneck Castle in the Alpine district of the Grisons. It contained coins of the Emperor Louis I, Charles the Bald, and Berenger and Lambert, kings of Italy, and dates from c. 900.

Another example, somewhat similar, has been figured, and was found with Roman remains at Mansfield Woodhouse, Notts.¹ 'Third brass' coins are also figured in the same plate, but the text does not say that these coins were actually found in the money-box.

MISCELLANEOUS OBJECTS

Glass. Greater part of a bead (G 1) of a bright sea-green colour, wedge-shaped (so that it might hang better). The crackle-marks on the surface, which are suggestive of letters, appear to be purely accidental. This specimen has been examined by Mr. Horace C. Beck, F.S.A., who writes: 'Beads of this type were made during the La Tène and Roman periods, and very similar ones are found occasionally in Saxon graves. From general appearances and the type of corrosion it probably dates just before the coming of the Romans.' However, from its depth in the Inner Ditch, viz. 1.5 ft., it is probably of Roman date.

Lead. Two pieces of sheet lead (L 1) were found in the Inner Ditch, depth 1.25 ft.

Baked Clay. Greater part of a baked clay sling-bullet, long in comparison to its width, of the usual type found in the lake-villages and on Ham Hill. Found in trenching in Cutting XII, Interior Space, depth 1.5 ft.

Spindlewhorls. Eight spindlewhorls, mostly broken in halves, were found, all in the Inner Ditch, except W 7 turned up in trenching at a depth of 0.5 ft. Those from the Inner Ditch were found at depths varying from 0.75 ft. to 2.25 ft. Two of them (W 1 and W 4) were made from pieces of Romano-British pottery; one is of chalk (W 5), one of the local stone (W 6), three of sandstone (W 3, 7 and 8), and one (W 2) is a perforated echinoid, *Holectypus depressus*, Leske, obtained from the local rock.

Flint Implements. Eighteen flint scrapers have been numbered, and bear the prefix 'F'. One (F 1) was found rather deep (4.5 ft.) in the Outer Ditch, but in the position in

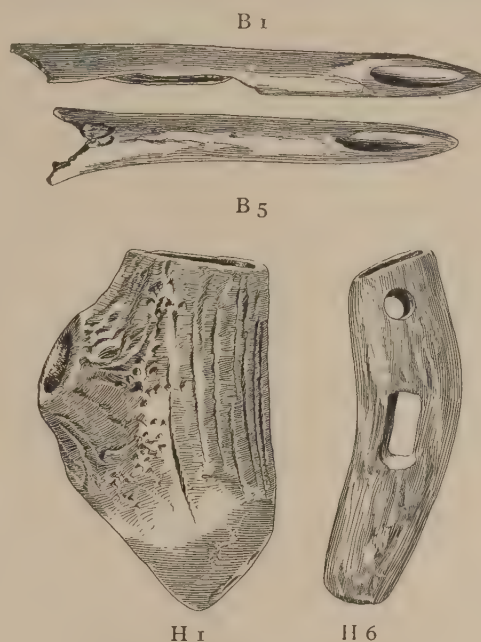


Fig. 9. Objects of Bone and Antler. ($\frac{1}{2}$)

¹ *Archaeologia*, viii, 373, and plate xxiv.

EXCAVATIONS AT KINGSDOWN CAMP

which there was a large fissure (Cutting I); and two others (F 9 and F 26) were also found in the silting of the Outer Ditch. One (F 16) was found close to the Roman wall, depth 2 ft., another (F 24) in trenching, depth 0.5 ft., and another (F 10) in the Roman entrance-way, depth 1 ft.

Distribution of Pieces of Baked Clay, Kingsdown Camp

<i>No. of Cutting.</i>	<i>Division of Cutting.</i>	<i>Layer.¹</i>	<i>No. of Pieces.</i>	<i>Remarks.</i>
II.	Inner Ditch	2	2	—
"	"	3	3	—
V.	"	1	5	Three, small.
"	"	2	3	Probably daub.
"	Hearth iii	—	1	Large piece.
XI.	Inner Ditch	1	5	Some showing finger-marks.
"	"	2	2	One small; the other showing finger-marks.
"	"	3	1	—
XII.	Outer Ditch	1	2	One, small.
"	"	3	2	Small pieces.
"	Hole 4	1	2	—
"	Trenching	1	6	Rather small pieces.
XIV.	Inner Ditch	1	1	Also some fragments, perhaps of a funnel.
"	"	2	3	May be part of a mould.
XV.	"	1	3	—
XVI.	Trenching	—	2	Small pieces.
XVII.	Inner Ditch	1	3	—
			46	

The remainder of the scrapers were collected from the Inner Ditch, at depths varying from 0.75 ft. to 3.5 ft. (F 3, 4, 5, 7, 12, 18, 19, 21, 22, 23, 25, 27).

An arrowhead (F 11) of triangular form, with one cutting-edge decidedly convex, well worked, length 25 mm. (1 in.), was found in the Roman entrance-way, depth 1 ft. A knife (F 14), finely worked, was found deep in the Inner Ditch (Cutting V).

In addition there were two flint hammer-stones (F 13 and F 15) found in the Inner Ditch, depth 1.5 ft. and 1 ft. respectively; and another of sarsen (S 8) found in Hole 2, Cutting XII, depth 1 ft. Also a core (F 20), depth 3 ft. in the Inner Ditch, and a roughly worked implement of *tranchet* type (F 28), depth 2 ft., near the inner face of the wall.

A large number of flint flakes (533) were found in the various cuttings, as set out in the annexed table (p. 91).

Part of a saddle quern (Q 1) was found in Hole 1, Cutting XII, where it was used as one of the lining-stones placed in an almost vertical position against the N. side of the hole with other stone slabs. On the upper side it has four deep and two shallow grooves, the result apparently of sharpening a pointed instrument. The top of the quern was 1.5 ft. below the surface.

Part of the upper stone of another saddle quern (Q 2) was found near the surface in trenching in the Interior Space.

About one-half of a mortar (S 9), made of Forest Marble and presumably of the

¹ Layer 1, surface to depth of 1.5 ft.; Layer 2, 1.6 to 2.5 ft.; Layer 3, 2.6 ft. to bottom.

EXCAVATIONS AT KINGSDOWN CAMP

91

Distribution of Flint, Kingsdown Camp

<i>No. of Cutting.</i>	<i>Division of Cutting.</i>	<i>Layer.¹</i>	<i>No. of Flakes.</i>	<i>No. Burnt (included in last column).</i>	<i>Other Flints found (unnumbered).</i>
I.	Outer Ditch	1	3	—	—
"	"	3	2	—	One scraper, rough.
II.	"	1	1	—	—
"	Inner Ditch	1	20	2	Two scrapers, rough (one burnt).
"	"	2	24	—	Three cores.
"	"	3	2	—	—
III.	Outer Ditch	1	19	—	Half a knife.
"	"	3	2	—	—
"	Inner Ditch	1	11	2	—
"	"	2	13	2	One of the flakes has secondary chipping.
"	"	3	3	—	—
IV. } VIII. } XVI. }	{ Trenching, Interior Space }	—	106	8	{ One has secondary chipping. One core ; part of burnt scraper ; combined end- scraper and knife.
V.	Inner Ditch	1	4	—	—
"	"	2	4	—	—
"	"	1-2	31	—	Two cores.
"	"	3	2	—	—
XI.	"	1	33	3	Two have secondary chipping.
"	"	2	5	—	—
"	"	3	6	—	—
XII.	Main Cutting	1	24	—	—
"	"	2	3	—	One burnt core.
"	Outer Area	—	4	—	—
"	Outer Ditch	1	2	—	One core ; one burnt flint.
"	"	3	4	—	—
"	Hole 1	Below 1 ft.	3	—	—
"	Hole 2	Above 2 ft.	8	—	—
"	"	2 ft. to bottom	4	—	—
"	Hole 3	Near bottom.	19	6	One burnt core.
"	Hole 4	—	14	—	(See pp. 72-3.)
XIV.	Outer Ditch	1	3	—	—
"	"	2-3	1	—	—
"	{ Inner Ditch } { and Causeway }	1	14	—	Two cores.
"	Inner Ditch	2	7	—	—
"	"	3	29	—	{ One with secondary chipping ; one from Layer 4.
XV.	"	1	38	3	—
"	"	2	16	—	—
"	"	2-3	3	—	—
"	"	3	6	—	—
XVII.	Outer Ditch	3	3	1	—
"	Inner Ditch	1	18	—	—
"	"	2	19	2	—
			533	29	

¹ Layer 1, surface to depth of 1.5 ft. ; Layer 2, 1.6 ft. to 2.5 ft. ; Layer 3, 2.6 ft. to bottom.

EXCAVATIONS AT KINGSDOWN CAMP

Distribution of other Unnumbered Specimens, Kingsdown Camp

<i>No. of Cutting.</i>	<i>Division of Cutting.</i>	<i>Layer.¹</i>	<i>Name of Object.</i>	<i>Number, &c.</i>
I.	Outer Ditch	3	Knife-cut rib-bone	One, depth 3.25 ft.
II.	Inner Ditch	1	Smooth pebble	One, large
"	"	1	Whetstone	Incomplete
"	"	2	Ditto	One, incomplete
"	"	2	Iron nail	One
"	"	2	Human skull	Fragment
III.	"	1	Whetstone	One, incomplete
"	"	2	Ditto	Ditto
V.	Hearth ii	—	Ditto	Ditto
"	Inner Ditch	1	Ditto	Large, incomplete
"	"	1	Fossil	<i>Cyclothyris boueti</i> Dav. (<i>Rhynchonella boueti</i>)
XI.	"	2	Boar's tusks	Two
XII.	Trenching	1	Whetstone	One, incomplete
"	"	2	Bronze slag	Two pieces
"	"	2	Boar's tusk	One
XIV.	Inner Ditch	1	Slingstone	One
"	"	2	Hammerstone	Quartz, piece of one
"	"	2	Bronze slag	Several small pieces
XV.	"	1	Whetstones	Two, incomplete
"	"	1	Pebble	One, reddish-brown
"	"	1	Fossil	<i>Modiola gibbosa</i> (Sow.)
"	"	1	Fossil gastropod	<i>Pleurotomaria</i> , sp.
"	"	1	Boar's tusk	One, much cut
"	"	1	Oystershell	One
XVI.	Trenching	—	Stone pounder	Half, smooth
"	"	—	Whetstone	One
XVII.	Inner Ditch	2	Bronze	Small fragment

Roman period, was found in the trenching at a depth of 0.75 ft. The cupped part is about 2 in. deep.

A few whetstones, pounders, and mullers were also collected from the trenching and the ditches.

A large number of pieces of Pennant stone was found in various parts of the camp, but they were not counted from all the cuttings.²

Human Skull Bone. In addition to the infants' skeletons, several pieces of human skull, adult, were discovered. M 2, a piece of parietal bone found on the edge of the Inner Ditch, depth 1.15 ft.; M 7, part of frontal and parietal bones, found in the Inner Ditch, depth 1.5 ft.; and in the same ditch, depth 1.25 ft., a few fragments of skull showing three cuts (perhaps sword-cuts) made at or shortly after the time of death.

¹ Layer 1, surface to depth of 1.5 ft.; Layer 2, 1.6 ft. to 2.5 ft.; Layer 3, 2.6 ft. to bottom.

² The length of Inner Ditch measuring about 60 ft. and known as Cutting XI, for instance, produced eighty-one pieces of Pennant stone in Layer 1, thirty pieces in Layer 2, and eight in Layer 3.

SKELETONS OF INFANTS

An interesting feature of these excavations was the discovery of several very young children buried in the Inner Ditch, mostly in a group on the east side of the camp, and along the inner margin of the southern Roman wall (either in the position of the Inner Ditch or at no great distance from it).

The following gives some details of these burials, numbering ten (M 14, also marked on the Plan, being described at the end):¹

M 1. Skeleton of an infant found in the Inner Ditch, SW. Extension of Cutting II, lying on a ledge of solid rock and under a projecting stone of the wall. The body was in a crouched position on its right side, face and knees almost touching the wall. Depth 2.25 ft. below the surface. Fine silt round the remains.

M 5. Infant's skeleton found close to the inner face of the stone wall when Cutting XII was excavated across the camp. Near 'K' this cutting was being extended slightly northwards to find the inner curve of the wall, when the bones were discovered at a depth of 2.5 ft., lying under a flat stone (2.75 ft. by 1.25 ft.) which had been taken from the upper existing course of the wall at the time of burial in order to cover the remains.

M 6. Infant's skeleton found in the Inner Ditch in Cutting XI, on the SW. side of the camp. It was lying on its back with the head to south, close to the inner side of the ditch, at a depth of 2.75 ft. and about 0.75 ft. above the bottom. The knees were drawn up, the left tibia crossed over the right.

M 8. Infant's skeleton found in the silting of the Inner Ditch in Cutting XIV, on the S. side of the camp and close to the inner face of the Roman wall, which was built over the silting in this part. The body was lying beneath a slab of stone measuring 1.1 ft. by 0.8 ft.; depth 2.5 ft. below the surface.

M 9. Infant's skeleton found in the Inner Ditch, Cutting XV, on the S. side of the camp, close to the outer side of the ditch; depth 3.35 ft. below the surface, and about 0.25 ft. above the bottom.

M 10. A similar burial, found in the middle of the ditch, near M 9, and at the same depth.

M 11. A similar burial, found as M 10, at a depth of 3.1 ft., and about 0.4 ft. above the bottom.

M 12. A similar burial, found in the same ditch, near the inner side, at a depth of 2.85 ft. below the surface, and about 1.25 ft. above the bottom.

M 13. A similar burial, found near the outer side of the same ditch, at a depth of 3.85 ft., and about 0.3 ft. above the bottom.

M 15. Infant's skeleton, found in Cutting XVII, on the S. side of the camp, about 2.25 ft. from the inner face of the wall, and 2.5 ft. below the surface.

M 14. At this point in Cutting XIV, on the S. side of the camp (marked on the Plan, plate xv), barely a foot N. of the wall, and at a depth of 2 ft. (to middle), in the upper part of the silting of the Inner Ditch, a small compact heap of burnt bone, charcoal, one or two fragmentary bits of pottery, etc., was found, and most of the material was kept, as it was thought possible the remains might prove to be a cremated interment—possibly the calcined remains of an infant. The tray of material was sent away for examination, but nothing satisfactory was determined.

It is seen, then, that the remains of ten young children were found, and in no case were there any indications of a grave. It is evident that the burials were not made after the Inner Ditch had become filled up to its present level, and they are undoubtedly referable to the period when this very small camp was occupied by the Romans. It is also evident that women formed part of the population, and this conclusion (a very obvious one) is strengthened, to some extent, by the large number of brooches which

¹ The numbers attached to the human remains, including the infants' skeletons, bears the prefix 'M'. But on the plan, plate xv, the position of the infants is marked by an asterisk (*), together with the numbers.

were found. The Romans evidently dug holes for these interments in the partly silted-up ditch of the earlier occupation; and the burials prove that the Inner Ditch had silted up considerably before the Roman occupation. At the same time it must be remembered that this ditch was by no means deep in any part, and its partial silting-up would not necessarily take a large number of years.

With three exceptions all the infants' skeletons were re-buried by us. In April 1929 two of the infants from the 'group' of five (M 9 to M 13) were sent to Sir Arthur Keith, F.R.S., for examination, and he reported that one was a full-time child that died before or just after birth, and the other a child of four months, the milk incisors being near eruption. Later we sent the last infant (M 15) found to Sir Arthur, and this he described as 'a full-time new-born child of good size; bones rather longer than most of our full time; the teeth in lower jaw, however, are at the birth stage'.

But our discovery of babies is nothing compared to the great find of infants at a Romano-British homestead in the Hambleden Valley, Bucks. We will quote the late Mr. A. Heneage Cocks, F.S.A.:¹

'A remarkable feature of this excavation was that the ground, roughly speaking throughout the northern half, was positively littered with babies. They number 97, and most of them are newly born, but an occasional one is rather older. A few were laid at length, but the majority were evidently carried and buried wrapped in a cloth or garment, huddled in a little bundle, so that the head was almost central, and the knees above it; usually, therefore, the whole of the scanty remains came away in one spit. As nothing marked the position of these tiny graves, a second little corpse was sometimes deposited on one already in occupation of a spot, apparently showing that these interments took place secretly, after dark.'

In answer to a recent inquiry, Mr. Philip Corder has kindly sent the information that in the course of excavating the Roman fort at Malton, Yorks.,² the directors of the work have found twenty-eight infants mostly buried in the floors of fourth-century buildings in the fort. 'In one place in the N. corner of the fort ten interments were found in the floor of one building only 16 ft. broad. They appear to be all full-term children, and none could be more than a very few weeks old. In only one instance was anything found with these skeletons—a jet spindlewhorl and a finely carved miniature animal also in jet. Two of the infants were found in the S. guard-room of the NE. gate (period 5), which is probably Constantinian; but as this guard-room was in use in the Theodosian period, I am inclined to attribute the interments to the latter part of the fourth century.'³

It is interesting to note that a few skeletons and bones of infants were found on the floors and in the substructure below the clay in the Glastonbury Lake Village.⁴

Pitt-Rivers gives a table showing the number and locality of bones of infants found in the Romano-British Village, Rotherley.⁵ There are twenty-nine items. He adds, 'It would not be safe to say that this points to infanticide, but the fact of their being new-born is worthy of notice'.

¹ *Archaeologia*, lxxi, 150.

² *Antiquity*, ii, 69-82.

³ Mr. Corder says that for the present they will only mention these interments without describing them in detail, reserving them and many small finds until a later report.

Skeletons of infants were found with Roman remains at Ickleton, Cambs., in 1848 by the Hon. R. C. Neville (*Arch. Journ.*, vi, 21).

⁴ *Glastonbury Lake Village*, 137, 154, 157, 674-6.

⁵ *Excavations in Cranborne Chase*, ii, 59, 199, 208.



During the excavation of the Romano-British Village, Woodcuts,¹ twenty-two skeletons of children were found buried in the pits and elsewhere. The majority of them were of new-born children, but three found in a pit were foetuses; only two of them were in the region of a year old.

CONCLUDING REMARKS

It is difficult to say what was the real purpose of this very small camp, which we have seen was rich in certain classes of relics. The camp was probably not vacated by the Romans until about the middle of the second century, judging from the position of the coins of Hadrian. On the other hand, it should be remembered that coins, especially the heavier ones, have a tendency of working down to lower levels during the ages. With these coins, and at practically the same level in the Inner Ditch, brooches of the Hod Hill type, *c.* A.D. 40-50, were found. The Inner Ditch had silted up when the Romans arrived, probably to an average depth of about 1.75 ft. below the present surface. It would seem that the latest date for the construction of the Inner Ditch could not be very long before the conquest of Britain by the Romans. In the lower silting we found half-a-dozen hearths, and at the same level and lower several objects were found comparable with remains obtained from the Somerset lake-villages, also the currency-bars, the iron dagger, and many fragments of rude pottery of prehistoric type. The presence of two saddle-querns and part of another, to the exclusion of rotary querns, makes one inclined to carry the date back a little earlier. Of one thing we are practically certain, and that is that the Outer Ditch is pre-Flavian, and was in all probability dug in the Claudius-Nero period.

The amount of iron slag discovered, although not large, is sufficient to indicate that smelting had been carried on here. But the fragments of baked clay were insufficient, we think, to afford evidence that the dwelling-places were wattle-and-daub huts.

APPENDIX I

Animal remains found at Kingsdown Camp

By J. WILFRID JACKSON, *D.Sc., F.G.S.*, Senior Assistant Keeper of the Manchester Museum

The Animal Remains obtained during the excavations at Kingsdown Camp, 1927-9, have been submitted to me for examination and report by Mr. H. St. George Gray, *F.S.A.*

The majority of the bones have been broken in the usual manner in order to extract the marrow, or are otherwise too imperfect to permit of measurements being taken. Notwithstanding their imperfections it has been possible to sort out the fragments into

¹ *Excavations in Cranbourne Chase*, i, 16.

EXCAVATIONS AT KINGSDOWN CAMP

the various species, and to compare them with remains from other well-known habitation sites.

The animals represented are small horse, small ox, small sheep, pig, dog, and cat. There are also a few bones of a small fowl. There is an entire absence of deer remains.

The bones come from the following locations :—

Outer Ditch, Layers 1 (surface to 1.5 ft.)
2 (1.5 ft. to 2.5 ft.)
3 (2.5 ft. to bottom).

Inner Ditch, Layers 1 (surface to 1.5 ft.)
2 (1.5 ft. to 2.5 ft.)
3 (2.5 ft. to bottom).

Various other cuttings at Kingsdown.

According to Mr. Gray the contents of the Outer Ditch and Layer 1 of the Inner Ditch are early Roman, and the contents of the lower part of the silting of the Inner Ditch, pre-Roman, perhaps of the latter part of the first century B.C.

There appears to be no difference in the fauna or in the size of the species obtained from the various levels and cuttings at Kingsdown, and all the bones agree very closely with those found at the Glastonbury Lake Village of the Prehistoric Iron Age,¹ and the somewhat earlier inhabited sites (Hallstatt and La Tène I) at All Cannings Cross,² Swallowcliffe Down,³ and Fifield Bavant Down,⁴ Wilts.

It is of some interest to note that there is no trace of Roman influence on the breeds of the various species at Kingsdown.

Owing to the sameness of the fauna throughout, no useful purpose will be served by enumerating the remains from the various levels and cuttings. Attention, therefore, will be directed to items of special interest only.

Notes on some of the Species.

HORSE (Celtic Pony). From Layer 3 of the Inner Ditch there is a fore cannon-bone or metacarpal measuring 208 mm. in length with a mid-shaft diameter of 30 mm. From the same layer are two slender tibiae, and from Layer 3 of the Outer Ditch an imperfect radius, representing the same type of animal. From Cutting II, inside wall, depth 1.5 ft., comes a metacarpal 191.5 mm. long and 27.5 mm. at the middle of the shaft, and from Cutting XV, layer 3 (2.5 ft. to bottom), is a metacarpal 193 mm. long and 28.5 mm. mid-shaft. Other remains of small horses consist of loose teeth and split and broken bones. Judging from the presence of the latter it would appear that this animal contributed to the menu at times as at Glastonbury.

The animals to which the above bones belonged were probably from 11½ to 12½ hands in height at the withers, and of the same slender-limbed variety as in the Roman Fort at Newstead, described by Professor Ewart as the 'plateau' or *Equus agilis* type.⁵ Taken as a whole, the bones indicate that the camp-dwellers at Kingsdown possessed small-sized animals of the Exmoor and New Forest

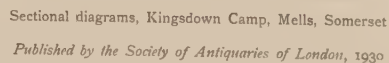
¹ See report in *Glastonbury Lake Village*, vol. ii (1917), pp. 641-72.

² *The Early Iron Age Inhabited Site, All Cannings Cross Farm, Wilts* (1924), pp. 43-50.

³ *Wilts Arch. Mag.*, vol. xliii, pp. 90-3.

⁴ *Ibid.*, vol. xlii, pp. 492-3.

⁵ 'The Animal Remains at Newstead', by J. C. Ewart, in *A Roman Frontier Post and its People*, by James Curle, 1911.



pony type, and in this respect they resemble the dwellers in the Romano-British Villages at Rotherley, Woodcuts and Woodyates, Cranborne Chase,¹ and at Glastonbury and the other stations mentioned above.

CELTIC OX. The remains of small oxen are fairly numerous, but owing to their imperfect condition only one or two are capable of measurement. From Layer 2 of the Outer Ditch there is a humerus measuring 227 mm. (head to condyles), 33 mm. at the middle of the shaft, and 64.5 mm. across the distal condyles. From Layer 3 of the Inner Ditch are two slender metatarsals measuring 189 and 196 mm. in length respectively; also two small horn-cores of the typical *Bos longifrons*. The above bones, together with the numerous split fragments of similar bones, all appear to indicate small animals of the Celtic Shorthorn type, as at Glastonbury and other pre-Roman stations.

CELTIC SHEEP. This animal is represented by many loose teeth, fragmentary jaws, and slender limb-bones including metacarpals and metatarsals. All the remains are of the characteristic Romano-British type as at Glastonbury, etc.

PIG. The domestic pig is represented mainly by loose teeth and fragmentary jaws, together with a few split bones. So far as they go they agree with similar remains found at Glastonbury and other places.

DOG. Nearly all the remains of dog come from the Inner Ditch, as follows:—Layer 1, a left and right ramus; Layer 2, a right ramus; and Layer 3, a left ramus of the lower jaw. From other situations there are some loose teeth and fragments of upper jaws. The remains suggest an animal of the size of a sheep-dog or retriever. Similar remains were found at Glastonbury.

CAT. The remains of cat consist of an innominate bone from Cutting V (depth to 1.5 ft.), and two split tibiae and a split humerus from Layer 3 of the Inner Ditch.

SMALL FOWL. A humerus from Cutting V (depth to 1.5 ft.), two tarso-metatarsals from Layer 3 of the Inner Ditch, and a tarso-metatarsal from Layer 2 of the same ditch belong to a small species of fowl.

APPENDIX II

Identification of Charcoals from Kingsdown Camp, Somerset (1927-9).

By J. CECIL MABY, B.Sc., A.R.C.S.

Cutting II, Inner Ditch, Layer 2	. . .	<i>Quercus</i> , sp. (almost certainly Common Oak).
Cutting V, Outer Ditch, Hearth ii	. . .	<i>Corylus</i> , sp. (Hazel).
Cutting V, Bottom of Outer Ditch	. . .	<i>Quercus</i> , sp. (almost certainly Common Oak).
Cutting XI, Inner Ditch, Layer 2	. . .	<i>Prunus</i> , sp. (Plum, Cherry, etc.).
Cutting XII, Hole 4, Layer 3	. . .	<i>Fraxinus</i> , sp. (Ash).
		<i>Corylus</i> , sp. (Hazel).
		Also a piece of full-formed (anthracite) coal. ²
Cutting XII, Bottom of Hole 2	. . .	<i>Quercus</i> , sp. (Common Oak ?—slightly 'coaly').
Cutting XIV, Inner Ditch, Layer 2	. . .	<i>Quercus</i> , sp. (almost certainly Common Oak).

¹ *Excavations in Cranborne Chase*, by General Pitt-Rivers, vols. i and ii, 1887-8.

² No microscopic (plant) structure was readily discernible, as in wood charcoal, and the substance had all the usual qualities (density, brittleness, hardness, glassiness, etc.) of anthracite coal.

EXCAVATIONS AT KINGSDOWN CAMP

Cutting XIV, Inner Ditch, Layer 3 (with P 45)	<i>Fraxinus</i> , sp. (Ash).
Cutting XV, Inner Ditch, Layer 2 . . .	<i>Pyrus</i> , sp. (Apple, Pear, etc.).
Cutting XV, Inner Ditch, Layer 3 . . .	<i>Quercus</i> , sp. (almost certainly Common Oak; but narrow rings—badly grown).
	<i>Fraxinus</i> , sp. ? (Ash).
	<i>Pyrus</i> , sp. (Apple, Pear, etc.).
	<i>Quercus</i> , sp. (almost certainly Common Oak—large piece and fragments of 'knotty' wood).
Cutting XV, Inner Ditch (2½ in. below Hearth iv)	<i>Quercus</i> , sp. (almost certainly Common Oak).
Cutting XV, Inner Ditch, Hearth vi . . .	<i>Quercus</i> , sp. (almost certainly Common Oak—a large piece and fragments, including a 'knot' in the wood).

APPENDIX III

Report on the non-Marine Mollusca, Kingsdown Camp.

By A. S. KENNARD, A.L.S., and B. B. WOODWARD, F.L.S.

A large quantity of earth and shells obtained during the excavations, duly marked with the exact position and depth, was forwarded to us by Mr. H. St. George Gray.

From the Inner Ditch nineteen species were obtained, viz.:

<i>Carychium minimum</i> (Mull.)	<i>Helicella pura</i> (Ald.)	<i>Arianta arbustorum</i> (Linn.)
<i>Acanthinula aculeata</i> (Mull.)	„ <i>radiatula</i> (Ald.)	<i>Cepaea nemoralis</i> (Linn.)
<i>Cochlicopa lubrica</i> (Mull.)	<i>Vitrea crystallina</i> (Mull.)	„ <i>hortensis</i> (Mull.)
<i>Goniodiscus rotundatus</i> (Mull.)	<i>Limax arborum</i> (Bouch.-Chant.)	<i>Lacinaria biplicata</i> (Mont.)
<i>Arion</i> , sp.	<i>Xerophila itala</i> (Linn.)	<i>Clausilia rugosa</i> (Drap.)
<i>Helicella cellaria</i> (Mull.)	<i>Trochulus hispidus</i> (Linn.)	<i>Marpessa laminata</i> (Mont.)
„ <i>nitidula</i> (Drap.)		

From the Outer Ditch twenty species were determined, viz.:

<i>Pomatias elegans</i> (Mull.)	<i>Arion</i> , sp.	<i>Chilotrema lapicida</i> (Linn.)
<i>Carychium minimum</i> (Mull.)	<i>Helicella cellaria</i> (Mull.)	<i>Arianta arbustorum</i> (Linn.)
<i>Pupilla muscorum</i> (Linn.)	„ <i>nitidula</i> (Drap.)	<i>Cepaea nemoralis</i> (Linn.)
<i>Vallonia excentrica</i> (Sterki)	<i>Vitrea crystallina</i> (Mull.)	„ <i>hortensis</i> (Mull.)
<i>Cochlicopa lubrica</i> (Mull.)	<i>Vitrina pellucida</i> (Drap.)	<i>Clausilia rugosa</i> (Drap.)
<i>Ena obscura</i> (Mull.)	<i>Xerophila itala</i> (Linn.)	<i>Cecilioides acicula</i> (Mull.)
<i>Goniodiscus rotundatus</i> (Mull.)	<i>Trochulus hispidus</i> (Linn.)	

The slight differences between these two lists cannot be considered of any importance and the two faunules are practically identical. The conditions indicated are those of a damp woodland. There is a rarity of those species usually associated with human occupation, and there can be no doubt that the greater number of the shells belong to a period anterior to the construction of the ditches, how much earlier it is impossible to say. Of particular importance is the occurrence of *Lacinaria biplicata* (Mont.), for the records of this species in a recent state in Somerset are extremely doubtful (see *Proc. Som. Arch. & N. H. Soc.*, lvi, 1911, Mollusca appendix, pp. 42-3).

IV.—*The Eucharistic Reed or Calamus.* By TANCRED BORENIUS, Ph.D., D.Lit.

Read 28th November 1929

ALTHOUGH it is in the nature of things that all liturgies should be characterized by great conservatism, yet there are plenty of instances of liturgical usages which in the course of time have become obsolete or nearly so; and one of the most interesting of these is, I venture to think, that which concerns the object with which the present paper deals, namely, the Eucharistic Reed, or, as it is more frequently called, the *Calamus* or *Fistula*.

The definition of this object is a pipe or tube through which the consecrated wine is imbibed from the chalice during mass or communion. On consulting archaeological and liturgical handbooks and dictionaries you may find a certain amount of information concerning this liturgical vessel;¹ and in the eighteenth century two German clergymen wrote valuable dissertations on it, namely, Johannes Vogt of Bremen, whose treatise is called *Historia fistulae eucharisticae*, and having been first brought out in 1740 was republished with additions at Bremen in 1772, and J. Christopher Koecher, whose *Apospasmatica historiae fistularum eucharisticarum* appeared at Osnaburgh in 1741.² No archaeologist of recent times has, however, gone thoroughly into this subject; and prompted by the discovery of a hitherto unrecorded example I have thought it worth while to do so.

As to the Latin terms used to describe the vessel in question, there exists

¹ Compare Bona, *Rerum liturgicarum libri duo*, Rome, 1671, vol. ii, pp. 238-40; G. Moroni, *Dizionario di erudizione storico-ecclesiastica*, vol. xxv (1844), pp. 84-6, s.v. *Fistola o Canna*; L. de Laborde, *Notice des émaux . . . du Louvre*, vol. ii (1853), s.v. *tuyau*; Smith and Cheetham, *Dictionary of Christian Antiquities*, vol. i (1875), s.v. *Fistula* (article by H. J. Hotham); W. E. Scudamore, *Notitia Eucharistica* (1876), pp. 752-5; F. X. Kraus, *Realencyklopädie der christlichen Alterthümer*, vol. i (1882), s.v. *Fistula* (article by Krüll); *id.*, *Geschichte der christlichen Kunst*, vol. ii, pt. i, p. 474; H. Otte, *Handbuch der kirchlichen Kunst-Archäologie des deutschen Mittelalters*, fifth ed., Leipzig, 1883, i, 219 sq.; Rohault de Fleury, *La Messe*, vol. iv (1887), 99, 181-5; V. Gay, *Glossaire archéologique*, vol. i (1887), s.v. *Chalumeau*; P. Beda Kleinschmidt, in *Theologisch-praktische Quartalschrift*, vol. lv (Linz, 1902), pp. 297 sqq. D. Rock, *The Church of Our Fathers*, ed. Hart and Frere, vol. i (London, 1903), pp. 128-32; E. Bergner, *Handbuch der kirchlichen Kunstalterthümer in Deutschland* (1903-5), p. 320 sq.; Cabrol, *Dictionnaire d'archéologie chrétienne et de liturgie*, vol. ii, pt. ii (1910), s.v. *Calamus* (article by W. Henry) and vol. iii, pt. i (1913), s.v. *Chalumeau* (article by H. Leclercq); F. Witte, *Die Liturgischen Geräte . . . in der Sammlung Schnütgen in Köln* (Berlin, 1913), p. 33 sq.

² Both these monographs have now become very scarce; that by Vogt I have been able to consult in the Library of the British Museum (as part of Oelrich's *Germaniae litteratae opuscula*, vol. i (Bremen, 1772), pp. 185-260). Of the still more rare treatise by Koecher, I eventually, after much fruitless search, found a copy in the University Library of Göttingen.

a great number ; but the most frequent are *Fistula* and *Calamus*, and the latter word—which corresponds to the French *chalumeau eucharistique*, and is translated by Dr. Rock as the ‘Eucharistic Reed’—is perhaps the most convenient to employ. Other terms used are *Pugillarium* (or *Pugillaris*), *Sumptorium* (or *Suctorium*), *Sipho*, *Pipa*, *Arundo*, *Canna*, *Canalis*, *Canola*, *Tubulus* (*Tuellus*), *Virgula*, *Nasus*,¹ and possibly *Dux*. In Italian I have come across the terms *Calamo*, *Fistola*, *Canna* and *Sanguisuchello* ; while in German I have seen this object referred to as *Rorlin* (by Dr. Luther, for instance),² *Kelchröhrgen*, *Kelchröhrchen* and *Saugröhrgen* ; in Austria, the expressions *Roerl* and *Zapfl* may be traced. In France, *tuyau* is a term not infrequently used.

A few words of etymological explanation here may not be out of place. Of the terms more frequently used, *Calamus* and *Fistula* call for little comment ;³ the term *Pugillarium* on the other hand offers a curious instance of transferred significance. It meant originally the stylus, used by the Romans for writing on tablets coated with wax ; and subsequently came to mean any form of writing implement. As that is, too, a meaning of the word *Calamus*, the Eucharistic Reed came, most incongruously, also to be known as *Pugillarium*. And in this connexion it may not be irrelevant to draw attention to what can only be described as the *magical* use of the consecrated wine in the early middle ages for the signature of particularly important religious documents. When the bishops, gathered at the Synod of Constantinople in 869, excommunicated Photius, it is on record that they signed the act of excommunication with pens dipped not into ink, but into consecrated wine : as Niketas David Paphlagon (*ob.* 890) puts it : καὶ ἐν αὐτῷ τοῦ σωτῆρος τῷ αἵματι βάπτοντες τὸν κάλαμον,⁴ but in this context *κάλαμος* of course is used in its accustomed sense of ‘pen’. Here it may be remarked that although the use of the Eucharistic Reed is not entirely unknown in the Greek Church,⁵ it was yet essentially a Western practice : just as the use of the Eucharistic spoon for much the same purpose was the predominant practice in the Greek Church.

As to the reasons which prompted the introduction of this device, the all-

¹ As regards the term *Nasus*, Scudamore (*op. cit.*, p. 754) has noted that ‘a charter of Silo, king of the Asturias 777, speaks of a “silver Chalice and Paten, with a Basin and with its *Nasus*,” where the meaning is determined by a clause that comes after, “It will serve to give the Blood of the Lord to the People”’.

² ‘... habt jhr bedacht, das man mit rorlin aus dem kelche trinken solle, damit das blut Christi nicht verroret werde’ (*Vermahnung zum Sakrament des Leibes und Blutes Christi*, 1530, Weimar edition, vol. xxx, pt. ii, p. 608).

³ It may, however, here be noted that another medieval significance for the word *fistula* is ‘altar column’ ; and that *Calamus* is used by Theophilus in a chapter (*De Fiendendis Calamis*) in his treatise on art (c. 1100), in the sense of the iron rods dividing the glass panes of a window.

⁴ See Niketas David Paphlagon, *Bíos ’Ιγνατίου* in J. D. Mansi, *Sacrorum Conciliorum nova et amplissima collectio*, vol. xvi (Venice, 1771), col. 264.

⁵ Compare on this point Vogt, *op. cit.*, p. 219.

important consideration was no doubt that the use of the Calamus acted as a safeguard against any wastage of the sacrament by spilling—the risk of which was considerable in the case of a large *Calix Ministerialis*—by dripping, by adherence to the beard of male communicants, etc.¹ A mystical explanation was in the seventeenth century offered by the Italian ecclesiastical writer Angelo Rocca,² who suggested that the use of the Calamus symbolizes the reed on which the sponge was tendered to Christ at the Crucifixion; but that no doubt is a strained interpretation after the event which, for instance, in the eighteenth century, Pope Benedict XIV opposed.³

There have been notions abroad that the Calamus was introduced for the benefit of sick or aged communicants, and indeed I have myself been told in Vatican circles of a tradition which associated the papal use of the Calamus with an attempt at poisoning Julius II; but all such explanations must, I think, be groundless. At the same time it is but natural that metal tubes should have been used during the Middle Ages by invalids, for the purpose of consuming liquids, apart from any question of partaking of the sacred wine: such tubes for the use of invalids are mentioned in not a few records.⁴

The use of the Calamus can be traced back at any rate to the sixth century.⁵ There is a record that Bishop Desiderius of Auxerre, who lived in that century, presented eleven gilded *cannae*, weighing 5 lb., to his church.⁶ It has also been stated that Pope Gregory the Great (590–604) used a *virgula argentea perforata* for the communion;⁷ and it has been surmised that when Anastasius⁸ mentions among the gifts of Pope Hormisdas (514–23) to the Church of San Paolo fuori

¹ Compare Yrjö Hirn, *The Sacred Shrine*, London, 1919, p. 103, and Scudamore, *op. cit.*, p. 755, n. 5, who points out that Ernulphus (1115) held that the danger of the wine adhering to the hair of the face was a reason for withholding it from the laity (see Ernulphus' letter to Lambertus in Luc d'Achery, *Spicilegium*, Paris, 1723, vol. iii, p. 471 sq.: *Evenit enim frequenter, ut barbati, & prolixos habentes granos, dum poculum inter epulas sumunt prius liquore pilos inficiant, quam ori liquorem infundant. Ii si accesserint ad altare liquorem sanctum bibituri, quomodo periculum devitare poterunt inter accipiendum, quomodo uterque, accipiens videlicet & porrigens, effugient grande peccatum . . .*)

² Angelo Rocca, *De Sac. Summi Pontificis Communione*, tom. iv (Rome, 1697), p. 16, and in *Thesaurus Pontificiarum sacrarumque antiquitatum* (Rome, 1745, vol. i, p. 28).

³ Benedict XIV, *Opera*, x, 229.

⁴ E.g. 1328. *Un eserin d'argent à poudre, esmaillié et un tuiau d'argent à boire lait pour les yelz* (Inventaire des biens meubles de la royne Clémence). 1372. *Une cuillier et un tuiau d'argent à abreuver malades, prisié xxv s. p.* (Compte du test. de la Roynie). 1380. *Deux tuyaux d'or à boire, quand on est malade, pesant vi onces et demie* (Invent. de Charles V). L. de Laborde, *loc. cit.*

⁵ One gets indeed almost across the boundary line of the fifth century, if one concludes with Rohault de Fleury (*op. cit.*, p. 64) that the use of the Calamus is suggested by the line '*Hauriat hinc populus vitam de sanguine sacro*', which occurred on a (lost) chalice, made from material bequeathed to his successor by St. Remigius, who became Bishop of Rheims in 461 and died in 533.

⁶ Labbe, *Bibliotheca manuscriptorum nova*, vol. i, p. 242.

⁷ Mabillon, *Annales ord. S. Benedicti, ad ann. 600.*

⁸ L. Duchesne, *Le Liber Pontificalis*, vol. i (Paris, 1886), p. 272.

le mura 'scyphos argenteos stationales VI. cum duces' (sic), the latter word is the equivalent of the Eucharistic Reed.¹ Moreover, the first mention of the Calamus which occurs in any liturgy probably takes us to the sixth century, since the first *Ordo Romanus*, now held to have been drawn up in its present recension by Pope Stephen III about 770, is based upon a much earlier document, which has been thought to be of the sixth century. In this *Ordo* it is described how—after the pontiff, the bishops, the presbyters, and the remaining ranks down to the chief counsellor have communicated—the archdeacon takes the chalice from the chief hebdomadary bishop and pours it into a bowl, previously used in the service; 'he then hands the empty chalice to the district subdeacon who gives him the reed wherewith he communicates the people with the species of wine'.²

Passing to the Carlovingian period, we come upon frequent references to the Calamus. Among the gifts of Abbot Angilbert (A.D. 754) to the church of St. Riquier at Centule, Hariulf, writing in the early twelfth century, includes '*Canna argentea i. eburnea i.*'³ As we have already mentioned,⁴ there is a reference to a calamus called *Nasus* in an Asturian record of 777; and among the gifts of Charlemagne to St. Peter's was '*Calice maiore fundato cum sifone, pens. lib. xxxvii*'.⁵ In a poem on the Eucharist (*De Corpore et Sanguine Domini*), written in 831 by St. Paschasius Radbertus of Corbie, the following lines occur:

Regis adire sacrae qui vis solennia mensae,
 Almificum Christi corpus contingere votis
 Delicias vesci, roseum potare cruorem,
 Bacchica nostra velim, puero quae misimus olim,
 Et niveos casto condas in pectore flores:
 Rustica forte animo sed mella manabunt
 Tantum quae calamus Christi de fonte ministrat
 Vnde sitim pueri possint restringere (*al. restringere*) saltem
 Si libeat digne sectari jussa Tonantis.⁶

¹ E. G. Cuthbert F. Atchley, *Ordo Romanus Primus* (London, 1905), p. 25.

² I am using the translation by Mr. Atchley in his admirable edition of the *Ordo Romanus Primus*, p. 143; the Latin wording of the chief relevant passage is as follows: *Deinde archidiacono, accepto de manu illius calice, refundit in scyphum quem super diximus, et tradit calicem subdiacono regionario qui tradit ei pugillarem cum quo confirmat populum*. Elsewhere, in the description of the ceremonies on Easter Day, this *Ordo* mentions (p. 120) among the vessels taken from the church of St. Saviour *pugillares alios argenteos et alios aureos*. Reference is also made to the Eucharistic Reed in the second, the sixth, the tenth, and the fifteenth *Ordo Romanus*, dating respectively from the early ninth, the first half of the tenth, the eleventh, and the late fourteenth century. See Migne, *Patrologiae Cursus Completus*, tom. lxxviii, *passim*.

³ *Chron. Centul.* in Migne, *Patrologiae Cursus Completus*, tom. 124, col. 1248.

⁴ See above, p. 100, n. 1.

⁵ L. Duchesne, *op. cit.*, vol. ii (1892), p. 8.

⁶ Migne, *Patrologiae Cursus Completus*, tom. 120, col. 1261.

It is interesting to note that the metaphor employed and evidently suggested by the Eucharistic Reed is identically the one which many centuries later Thomas à Kempis (1380–1471) uses in the chapter of the *Imitation of Christ* which treats of the Advantages in Receiving the Holy Sacrament: ‘I shall alway put my mouth *unto the hole of the heavenly pipe of that fountain* so that I may at the least take a little drop to satisfy my thirst, so that I be not all dry’ (lib. iv. cap. iv. ver. 4): *Apponam tamen os meum ad foramen coelestis fistulae, ut saltem modicam inde guttulam capiam ad refocillandam sitim meam.*¹ Of other references to the Calamus, dating from the Carlovingian era, we may here mention that in 831 the Church of St. Riquier at Centule, again according to Hariulf, possessed *tutelli argentei iv.* and *canna argentea i., ex stanno i.*;² that the Emperor Lothaire I presented to the Monastery of Prüm (where he was buried in 855) a golden Calamus set with jewels;³ that the will of Count Eberhard, son-in-law of Louis the Pious, drawn up in 873, mentions *pipam auream*,⁴ and that among bequests noted in an inscription in the church of St. Maria in Cosmedin in Rome, dating from the time of Pope John IX (898–900), is a chalice with Calamus and paten.⁵

Of documentary references of later date relating to the diffusion of the Calamus on the Continent, the following synopsis represents but a selection:

940. Mention is made of *Calicem maiorem cum patena sumptorioque . . . ex auro* wrought for Rheims Cathedral.⁶

c. 1002–24. The Emperor Henry III is mentioned as having given to the cathedral of Merseburg *calicem aureum atque gemmatum cum patena et fistula . . . et magnum calicem ex eodem metallo* (sc. argento) *cum patena simul ac fistula.*⁷

1040. Suppo, abbot of Saint Michael’s Mount in Italy, leaves to his monastery a silver Calamus, inscribed *Hic Domini sanguis nobis sit vita perennis.*⁸

1086–8. Pope Victor III is mentioned as having given to the monastery of Monte Cassino *fistula aurea cum angulo* and *fistulas argenteas 2.*⁹

1127. The inventory of Bamberg Cathedral mentions two gold and silver Calami.¹⁰

¹ I have to thank Dame Laurentia McLachlan, O.S.B., for drawing my attention to this passage.

² *Chron. Centul. M.S.*, col. 1258.

³ C. Browerus and J. Masenius, *Antiq. et Annal. Trev.*, Liège, 1670, lib. 8, c. 114, p. 414.

⁴ J. Vogt, *op. cit.*, p. 204.

⁵ *Ibid.*, p. 196.

⁶ Flodoard, *Hist. Remens.*, Paris, 1611, Lib. III, cap. V, fols. 160–1.

⁷ Ditmar von Walbeck, *Theitmari Merseburgensis Episcopi Chronicon*, ed. Lappenbergh-Kurze, Hanover, 1889, Lib. VII (VI), cap. 42, p. 192.

⁸ Corblet, in *Revue de l’art chrétien*, 1885, p. 62; Mabillon, *Annal. Bened.*, iv, 490.

⁹ *Chronica Monasterii Casinensis* (*Mon. Germ.*, vol. vii, p. 753).

¹⁰ Weber, *Die Sct. Georgenbrüder am alten Domstift zu Bamberg*, 1884.

1188. Mention of *fistulae argenteae tres* in the treasury of Monte Cassino.¹

c. 1190. A regulation made by Alberic, abbot of Cluny, who died the aforesaid year, enacts that the Eucharistic Reeds are to be made of silver and not of gold.²

c. 1190. In the treasury of Mayence Cathedral *erant fistulae quinque ad communicandum argenteae*.³

1191. Among the contents of the chapel of Philip, count of Flanders, is mentioned a *fistula argentea*.⁴

1229. Among the sacred vessels of the church of St. Ansgar at Bremen is mentioned *een guldene Pipe*.⁵

1295. In the treasury of the Holy See are mentioned: *Canuli ad sacrificandum . . . It. Unum canulum de auro cum 2 manicis et uno pomello in quo est de opere nigellato.*

*3 canulos cum 3 pomellis de auro, pond. 3 unc. et dimidie scarl.*⁶

1343. The inventory of Notre Dame in Paris mentions: *duo tuelli argentei deaurati ad hauriendum vinum post communionem in die Pasche ponderis iiii unciarum et decem stellingorum*.⁷

1347. The inventory of Amiens Cathedral mentions: *Unum vas lapideum auro ligatum cum pipula argentea, de quo miscetur in communione die Pasche*.⁸

1363. The inventory of the duke of Normandy mentions: No. 93. *Une cuiller d'or et un tuyau d'or à administrer et recevoir le corps N.S.*⁹

1380. The inventory of Charles V, king of France, mentions *Un petit tuyau à boire, d'argent blanc, pesant xij esterlins* and *Un calice d'or, à un tuyau carré*.¹⁰

1399. The inventory of Charles VI, King of France, mentions *Deux tuyaux d'or à tirer le sang notre seigneur ou calice*.¹¹

¹ E. Gattula, *Historiae Abbatiae Cassinensis*, Venice, 1733, p. 570.

² Corblet, in *Revue de l'art chrétien*, 1885, p. 62.

³ *Rerum Moguntiacarum*, vol. ii, Frankfurt-on-Main, 1722, p. 105.

⁴ *Cart. Phil. Fland.*, in Martène, *Thes. Anecd.*, i. 639.

⁵ MS. Chronicle as quoted by Vogt, *op. cit.*, p. 205.

⁶ *Thesaur. Sedis apostol.*, f. 54, as quoted by Gay, *op. cit.* According to Labarte (*Histoire des arts industriels*, vol. iii, Paris, 1875, p. 418) the same MS. (Bibliothèque Nationale, Paris, MS. lat. 5180) also refers to a very ornate example, 'Un chalumeau d'or avec six rubis, six saphirs, une émeraude et vingt-trois perles . . . et il a un globule en ouvrage de filigrane'.

⁷ G. Fagniez in *Revue archéologique*, nouvelle série, vol. xxvii (1874), p. 253.

⁸ J. Garnier, in *Mémoires de la Société des Antiquaires de la Picardie*, Sér. i, vol. x (1850), p. 262.

⁹ *Inv. du duc de Normandie*, as quoted by L. de Laborde, *loc. cit.*

¹⁰ L. de Laborde, *loc. cit.*

¹¹ L. de Laborde, *loc. cit.*

1405. Adam of Usk, in describing the pope's mass in Rome on Easter Day, states: *sanguinemque de calice, versa ad populum facie, per longum canale aureum, armis regis Aragonie in medio ornatum, sugit et attrahit*. The passage goes on to say that, by reasons of benefits of his ancestors, the colours, yellow and red, of the arms of the said King are privileged to be used in the Roman court for the silk threads of the *litere graciose* (letters of grace) and for the canopy carried over the pope. The pope in question was Innocent VII (Cosimo de' Migliorati).¹

1414. Two silver pipes were made for the church of Verden, in North Germany.²

1416. The inventory of Notre Dame in Paris mentions: *1^e grant coupe d'argent, doré dedens et dehors à ii anses, pesant avec la patène xv mars, ii onces et demie, et se nomme le godet saint Thomas. Avec ce godet a ii tuyaux d'argent doréz et pour prendre le vin le jour de Pasques après la communion, pesant iiii onces et demie*.³

1419. Entry in the Vatican Accounts: *Provido viro Colino Vasalli domini nostri papae aurifici pro laborerio . . . armorum dicti domini nostri elevatione in calamo aureo ad sugendum eucaristiam facto*.⁴

1419. The inventory of Amiens Cathedral mentions: *Una pipula argentea habens iij circulos, cum quo sumitur vinum in die Pasche*.⁵

1497. The inventory of the treasury of Monte Cassino mentions *tres cannellae argenteae, ubi Abbas sumit Sanguinem Domini*.⁶

1502. The inventory of Laon Cathedral mentions: *Duo calami longi, argentei deaurati in extremitatibus et in medio, habentes pomellum deauratum necnon ansulam qua teneri possint, olim deservientes ad administrandum sanguinem preciosum Domini nostri, sub speciebus vini diacono et subdiacono*.⁷

1519. Theft from the church of St. Ansgar in Bremen of *twee sülverne pipen*.⁸

1527. The Cathedral of Havelberg mentioned as possessing '2 sülueren roere dar men mit communiciret'.⁹

1534. George III, Prince of Anhalt-Dessau, mentions in a letter to the Elector of Brandenburg that he has found Eucharistic Reeds in various places—the monastery of Lehnin, at Walkenried (Volkenrode?), and in the monastery of Kölbig, whence the Chalice and Calamus had been transferred to Dessau, where the Prince is again making use of them.¹⁰

¹ Adam of Usk, *Chronicon*, ed. Sir E. M. Thompson, 2nd ed., Oxford, 1904, pp. 98, 274. For this interesting reference, and for many other kind offices, I am indebted to Mr. G. McNeil Rushforth, F.S.A.

² Vogt, *op. cit.*, p. 205.

³ G. Fagniez, *u.s.*, p. 400.

⁴ E. Müntz, *Les arts à la cour des papes*, i. 22.

⁵ J. Garnier, *u.s.*, p. 286.

⁶ Gattula, *loc. cit.*, adding, 'Unica hactenus in reliquiario nostro superest argentea fistula.'

Cf. fig. 4.

⁷ E. Fleury, *Inv. de l'égl. de Laon*, Paris, 1855, p. 46.

⁸ Vogt, *op. cit.*, p. 205.

⁹ Riedel, *Cod. diplom. Brandenb.*, A. iii. 128.

¹⁰ George III, Prince of Anhalt-Dessau, *Predigten und Schriften*, Wittenberg, 1577, pp. 409 sq., 424; *Conciones et scripta*, Wittenberg, 1570, p. 499 b. Cf. J. Smend, *Kelchspendung und Kelchver-sagung in der abendländischen Kirche*, Göttingen, 1898, p. 34.

As to the diffusion of the Calamus in medieval England, there is abundant evidence to prove that it must at one time have been very considerable.

Aethelwold of Winchester (963-84) is mentioned as having presented to the abbey of Peterborough a silver Calamus,¹ and Bishop Leofric (1050-72) as having given to the cathedral of Exeter '*1 Silfren Pipe*'.² In the list of objects of value, disposed of by the abbey of Ely to raise the large sum of 700 or 1,000 marks demanded by William the Conqueror, reference is made to '*fistulas*'; and in the inventory of the same church taken in 1079 occur '*III. Calamos argenteos*'. Again, Roger of Hoveden mentions among the objects of ecclesiastical use distributed by William Rufus among the churches and monasteries of England, in pursuance of his late father's intentions, '*fistulas*'; and in the 1295 inventory of St. Paul's we read of a '*Calix grecus sine patena, cum duobus calamis argenteis deauratis . . .*'³ Indeed, as late as 1552, there is a reference in the inventory of St. John's, Beverley, to 'one loker for the sacrament, with ij pypes of everye, one with little silver . . .';⁴ while in 13 Eliz. (i.e. about 1570) the churchwardens in Crosthwaite in Cumberland were ordered to sell 'two pipes of silver, one silver paxe', etc.⁵

The normal use of the Calamus in medieval Europe, outside the Papal Chapel, may be reconstructed as follows, principally with the aid of a circumstantial description of the monastic discipline of Dijon in the eleventh century:⁶

The Calamus was kept in a special bag or case, '*ex panno mundissimo*', or else of leather, in a cupboard; and at the appropriate moment it was taken by the subdeacon, who handed it to the deacon, by whom it was placed on the

¹ Albert Way in *The Archaeological Journal*, vol. xx (1863), p. 358.

² Kemble, *Cod. Dipl.*, iv, p. 475.

³ *Acta Sanctorum*, St. Etheldreda, June, vol. iv, p. 453 (the word misspelt '*fisculas*'); *Liber Eliensis* (*Anglia Christiana*), i. 246. For this and the next reference I am indebted to Mr. A. W. Clapham, F.S.A.

⁴ *Liber Eliensis*, u.s., p. 250.

⁵ Roger de Hoveden, *Chronica* (R.S. li, vol. i, p. 140). The statement recurs in Florence of Worcester, *Chronicon*, ed. Thorpe (1899), ii. 21.

⁶ Sir C. J. Jackson, *Illustrated History of English Plate*, London, 1911, vol. i, p. 350.

⁷ Inventories of church goods for the counties of York, Durham, and Northumberland (*Surtees Society*, vol. cvii, 1897, p. 65). For this and the next reference I have to thank Mr. Hedley Hope-Nicholson.

⁸ J. Nicolson and R. Burn, *The History and Antiquities of the Counties of Westmorland and Cumberland*, vol. ii (1777), p. 90.

⁹ This is printed in E. Martène, *De antiquis ecclesiae ritibus*, Bassano, 1788, vol. iv, p. 64, and in excerpts in Vogt, *op. cit.*, p. 217 sq.; Rohault de Fleury has based on it his outline drawing, which we reproduce from *La Messe*, in fig. 1. See also Bocquillot, *Traité historique de la liturgie sacrée*, Paris, 1701, p. 185 sq.

corporale next to the chalice. The priest then partook of one particle of the Holy Bread and placed another in the chalice; thereupon he put the larger end of the Calamus into the chalice, imbibed the consecrated wine through the other,¹ and then gave the deacon the chalice and Calamus. The deacon



Fig. 1 Drawing illustrating the normal medieval use of the Calamus. From Rohault de Fleury, *La Messe*.



Fig. 2. Use of the Calamus by the Pope. From an engraving in Angelo Rocca, *Opera Omnia*, vol. i (Rome, 1719).

took the chalice in his left hand and held the Calamus in the two first fingers of the right hand; and having taken them to the altar appointed for this office, he held chalice and Calamus on the right of the altar, until everybody—including eventually himself and the subdeacon—had communicated. He then took the Calamus out of the chalice, sucked it at both ends, and gave it to be held by the subdeacon; thereupon he partook of what was left in the chalice, including the particle of the Holy Bread. The Calamus was thereupon carefully washed, internally and externally, with wine poured out of an ampulla, put back into its receptacle and then, with the chalice, locked up in the cupboard in which it was kept.

As regards the use of the Calamus, one regulation in the rule of the Cistercian Order may here be quoted. It lays down that the Calamus is not necessary in the *Missa Solennis* when the only communicants are the ministers; but its use is indicated when several people communicate.²

¹ When Durandus, in a passage of the *Rationale Divinorum Officiorum* (ed. Dura, Naples, 1859, p. 312), to which Mr. C. R. Peers, P.S.A., has kindly drawn my attention, describes how the priest when communicating *majorem partem oblate suscipit de patena, quam subdiaconus apportaverat de altari, ipsamque dentibus subdividens unam particulam ejus sumit et aliam in calicem mittit, et de sanguine cum calamo haurit*, this must not be interpreted as meaning that the Calamus was used for partaking of the particle of the Holy Bread. This was dealt with in a different fashion, as will be seen presently.

² *Lib. us. Ord. Cist.*, Cap. 53.

After the use of the Calamus had reached the diffusion which is evident from the facts now set forth, a development in a different direction took place. When, towards the end of the middle ages, laymen ceased to partake of the consecrated wine in the communion—the episode in church history known as the Withdrawal of the Chalice from the laity—the function of the Calamus was inevitably narrowed down; and also perhaps because the custom of a shaven face grew more general among the clergy,¹ the use of the Calamus became more and more restricted. It is true that after the Reformation the Lutheran church again made extensive use of it, both in Northern Germany and Austria.² One particular disadvantage attached, however, to the use of the Calamus—the impossibility of finding out whether a communicant actually had partaken of the consecrated wine; and so we find in 1696 the Elector of Brandenburg definitely prohibiting the use of the Calamus within his dominions, and the king of Denmark, Frederick IV, issuing an edict to the same effect in 1705 with reference to the city of Altona.³ Meanwhile, in the Roman Catholic church, the pope had continued to use the Calamus as he does to this day when solemnly pontificating,⁴ and on that occasion the Calamus is also used by the cardinals who serve the pope as deacon and subdeacon; moreover, it is on record that the pope has occasionally permitted a sovereign attending

¹ I owe this suggestion to Mr. Cuthbert Atchley.

² Dr. Luther's reference to the Calamus has been noted above, p. 100; and to some extent the practice of using the Calamus was even a subject of discussion at the Diet of Augsburg in 1530. Thus, D. Chrysaeus (*Historia der Augspurgischen Confession*, Frankfurt a. M., 1570, p. 194) prints a document with the heading 'Der Papisten fürgeschlagenen Mittel zur einigkeit', in which there occurs the following passage, 'Vnd acht man vm ehrung willen dess Sacraments gut seyn, da man beider gestalten unter ein wenig volcks aussgetheilet das solchs durch ein Rörlin empfangen und genossen werde.'

³ Vogt, *op. cit.*, *passim*. Mr. Hedley Hope-Nicholson has kindly drawn my attention to the fact that in Peck's *Desiderata Curiosa*, London, 1779, ii. 373, the following description occurs of the Vestry Plate belonging to Charles I in 1646. 'which was usually heretofore set upon the altar of his majesty's chapel at Whitehall', viz.: A pair of great candlesticks One gilt ship. Two gilt vases. Two gilt layres. A square basin and fountain. A silver rod. Mr. Hope-Nicholson has suggested that if the last-named object really was put on the altar it may have been a reed, otherwise it may more probably have been a cantor's staff.

⁴ Instances of transitory toleration on the part of the Roman Catholic Church of the use of the Calamus in connexion with temporary grants of the chalice to the laity are recorded in Austria and Bavaria in 1564: cf. J. Smend, *op. cit.* p. 32; A. Knöpfler, *Die Kelchbewegung in Bayern unter Herzog Albert V* (Munich, 1891), p. 149 sqq.; Vogt, *op. cit.* p. 236. Some of the regulations of the Provincial Council of Salzburg (Aug 29-Sept. 5, 1564) may be quoted in this connexion:—'1. In allen Kirchen wo viele Communicanten sub utraque sind, soll ein grosser Consecrationskelch von Gold oder Silber oder anderem vergoldeten Metall für das hochw. Sacrament sub specie vini hergestellt werden. Die Form soll so sein dass man leicht ohne Gefahr aus ihm in einen kleinen Kelch giessen kann, aus dem dann die Communicanten durch ein Rörchen das consecrierte Blut empfangen können... 8. Sanguis Christi soll Gesunden und Kranken nur durch ein Rörchen gereicht werden.'

the Papal Chapel to use the Calamus. This privilege was, for instance, on Easter Day 1355 extended to Peter IV, king of Aragon, by Pope Innocent VI.¹

In France the Calamus was employed down to 1437 in the Cistercian Order,² and to the time of the Revolution in the abbeys of St. Denis and Cluny.³ There is current a widely repeated statement that Pope Clement VI, a Frenchman, and one of the most Francophile of the Avignon popes, gave permission to the kings of France to use a Calamus, and that its use was in practice restricted to the Coronation service at Rheims and their deathbed communion. This is, however, not quite accurate: for the Bull of Clement VI, issued at Avignon on June 21, 1344, only gives permission (in the order here followed) to Jean, Duke of Normandy, the eldest son of King Philip VI, to his wife Bona of Luxemburg, to Philip VI, King of France, and to his consort, Queen Jeanne, to communicate under both kinds. No mention is made of the Eucharistic Reed in this document,⁴ although the risk of spilling the consecrated wine is referred to. The privilege of communicating under both kinds was one

Wenn der Priester unter der Messe die Communion reicht, soll er nach der allgemeinen Communion zuwarten, und erst dann das übrige sumieren und Kelch und Röhrchen abluiren und ablutionem sumieren oder einem Communicanten reichen. 9. Bei der Communion sollen die Priester sogleich acht geben, dass bei Bärtigen nicht etwas hangen bleibt, ebenso grosse Vorsicht ist bei Frauen und Kranken anzuwenden dass sie nicht etwa den Mund zu rasch abstergieren.' The chalice was again withdrawn from the laity in Bavaria in 1571.

¹ See Moroni, *Dizionario*, u.s. The details of the elaborate papal rite are described for instance in F. Cancellieri's *Description des Chapelles Papales*, Rome, 1819. The use of the Calamus by the Pope is illustrated in the engraving in vol. i (1719) of Angelo Rocca's *Opera Omnia* (p. 14), reproduced in fig. 2.

² Corblet in *Revue de l'art chrétien*, 1885, p. 62.

³ A description of the use of the Calamus in communicating at Cluny in the eighteenth century is given by Le Brun des Marettes, *Voyages liturgiques* (Paris, 1718), p. 149.

⁴ The following is the actual wording of the Bull in question as printed under no. 917 in *Clément VI (1342-1352) Lettres Closes, Patentes et Curiales*; edited by Eugène Déprez; tome i, deuxième fascicule, 1925, page 62; *Bibliothèque des Écoles Françaises d'Athènes et de Rome*:

[Avignon, June 21, 1344.]

Infrascriptis sic indulget ut possint Sacra, excepto corpore dominico, tangere, et per sacerdotes ministrari poculum sanguinis Domini.

Dilecto filio, nobili viro, Johanni primogenito carissimi in Christo filii nostri Philippi regis Francie illustris, duci Normannie. Sincere devotionis integritas, quam ad Deum ac nos et Sanctum Romanam ecclesiam gerere dinosceris, promeretur, ut petitionibus tuis illis presertim, que tue devotionis et salutis augmentum promovent, benignis et graciosis favoribus annuamus. Hinc est quod nos, tuis devotis supplicationibus inclinati, ut que sacra sunt, preterquam corpus dominicum, quod per alios quam sacerdotes tractare non convenit, tangere, quociens oportunum fuerit et ad hoc te inducet pie devotionis affectus, cum honestate tamen reverencia quibus decet, valeas et cum per confessorum tuum vel sacerdotem alium sacra communio corporis domini nostri Jhesu Christi tibi ministrabitur, possit etiam poculum sanguinis, constitutionibus, statutis, consuetudinibus et observantiis quibuscunque contrariis nequaquam obstantibus, ministrari, tibi, quamdiu vixeris et in quocumque statu,

of which the kings of France continued to avail themselves ever after; but there exists explicit evidence that the Calamus was *not* used at any rate in the Coronation service,¹ although, as we have seen, both Charles V and Charles VI did own Eucharistic Reeds. As an isolated case of the privilege to use the Calamus having been granted in recent times, it is on record that on 20th November 1846 Pius IX authorized a canon of the church of San Girolamo degli Schiavoni in Rome, who was afflicted with an illness which made him unable to move his head, to use the Calamus.²

As regards the Calamus in the middle ages, we are fortunate in possessing an elaborate description of how it was made in the wonderful encyclopaedia of the arts and crafts practised in the monastic ateliers about the year 1100, the *Schedula diversarum artium* by Theophilus, who in all probability was identical with the goldsmith monk, Roger of Helmershausen, a monastery within the diocese of Paderborn in Westphalia. In the third book of this treatise the forty-fifth chapter describes the making of a Calamus, and runs as follows:

You make also the pipe for the chalice in this manner. Make an iron in length a palm and four fingers, which at one end must be very fine and must continue increasing to the other extremity, which must be like a straw; and let the iron be round and smoothly filed. And when you have thinned some pure silver, fold it round this iron, joining the ends smoothly with a file, and taking off the iron, place it in the fire and solder it. Again placing the iron in it, beat it with the hammer equally over all until the join is no longer visible. Then make, by itself, a knob round and hollow, or square and solid, and make a perforation in it, through which the pipe is placed from the lower part,

eciam si regali dignitate fulgeres, fueris, tenore presencium de speciali gratia indulgemus. Volumus autem quod idem confessor vel sacerdos, qui tibi communionem hujusmodi ministrabit, circa hoc sic se gerat et caute, quod in ministracione tibi facienda de sanguine nichil extra vasa sacra effundi de illo valeat nec scandalum quomodolibet generari. Nulli ergo etc. Datum Avinione, xi kalendas julii, anno tercio.

Item in eodem modo, *dilecte in Christo filie nobili mulieri Bone, uxori dilecti filii, nobilis viri, Johannis primogeniti carissimi in Christo filii nostri Philippi regis Francie illustris, ducis Normannie.*

Carissimo in Christo filio Philippo regi Francie illustri.

Carissime in Christo filie Johanne regine Francie illustri.

Compare also Raynaldi, *Annales Ecclesiastici*, vi. 370.

I wish to thank Monsieur Eugène Déprez for his kind offices in helping me to trace this document.

¹ The Ceremonial of the Coronation of Charles V (1364) just mentions the Communion under both kinds; and in the famous MS. in the British Museum known as *The Coronation Book of Charles V*, there occurs an illumination illustrating the King's Communion in which the Archbishop holds the wafer in one hand and the chalice in the other, but no trace of the Calamus is seen. (See *The Coronation Book of Charles V of France*, ed. E. S. Dewick, Henry Bradshaw Society, vol. xvi, London, 1899, col. 43 and plates v and 28.) Compare also P. A. Alletz, *Cérémonial du sacre des rois de France*, Paris, 1775, p. 138.

² Corblet, in *Revue de l'art chrétien*, 1885, p. 62.

almost to the top, and then, the iron being taken away, you will again solder everywhere. And when it has become firm, the iron being put on anew, you beat everywhere from the knob downwards until it is made smooth and firm ; and from the knob upwards, namely, in that part which is wider and thicker, place on an iron, thin and wide, according to the size of the pipe, and beat it with the hammer upon an anvil, so that the upper opening may be square and thin, which from the knob upwards should surmount the chalice and be held in the mouth, but be below round and slender. Which being done, if you wish, you can ornament the knob with niello, and you will gild the rest of the pipe in the fashion above. Take great care in this, that you strongly scrape all thick silver which you wish to gild, whether for a cup, or plate, or bottle, because in working it forms a pellicle outside, from the fire and hammer, which if not scraped away when it is gilt, when it is coloured over the fire frequently and for a long time, becomes raised in places as small blisters, whose fracture shows the silver, and the work is deteriorated, nor can it be mended unless the gilding be wholly scraped off, and it be again gilt.¹

It will be noticed that Theophilus only speaks of silver as a material for the Calamus ; but as a matter of fact it was made of a variety of materials—gold, silver, bronze, brass, tin, ivory, and even glass—this latter material being expressly mentioned about the year 1200 as that of a Calamus used in the cathedral of Parma.² It may also be noted that while the Calamus generally was an object by itself, there are also instances of its having been soldered to the chalice. The Eucharistic Reed of this type was known as *fistula ferruminata*.³

In spite of the fact that, as we have seen, the Calamus was in very general use in Europe during the middle ages, very few examples of it have survived. There is none in any of the great museums of Western Europe, or in that wonderful collection of ecclesiastical vessels and other implements in the Schnütgen Museum at Cologne. Curiously enough, I know of not a single Calamus existing in France at the present moment, St. Denis and Cluny notwithstanding ; and what is by the way still more astonishing is that none is reproduced among the many objects from the Treasury of St. Denis, figured in Michel Félibien's well-known History of Saint Denis, published in 1706, though the inventory of the treasury of St. Denis, drawn up in 1739, does

¹ Quoted from the translation by Robert Hendrie (London, 1847), pp. 263-5.

² *Diaconus in sinistra parte tenens calicem cum sanguine Christi, confert omnibus sumere volentibus cum quadam vitrea virga. Clericatus, Decisiones sacramentales, i, Ven. Euch. Sacr. (Venice, 1757), p. 37.*

³ Lindanus (*Panoplia Evang.*, Paris, 1564, iv. 56, fol. 341 b) is one of the principal authorities as regards this type of Calamus: *Calicibus canna est ferruminata a fabreque inserta, unde Christi sanguinem licet sugere, non bibere. Tales duos vidimus Bolevuardiae Frisiorum. Habet et monasterium Thabor, et Berghem poculum simile, sed argentea (nam illi sunt stannei) fistula, veterem in ritum factum.* I have to thank M. Schmidt-Degener, Director of the Rijksmuseum of Amsterdam, for ascertaining for me that no example of the Calamus is known to survive in Holland.

THE EUCHARISTIC REED OR CALAMUS

mention a calamus.¹ Most of the surviving ones are to be found in Central Europe, in Austria, or Germany.

In many cases the Calamus was no doubt of great simplicity; such as one of the three examples, formerly at Weingarten, in the Diocese of Constance,

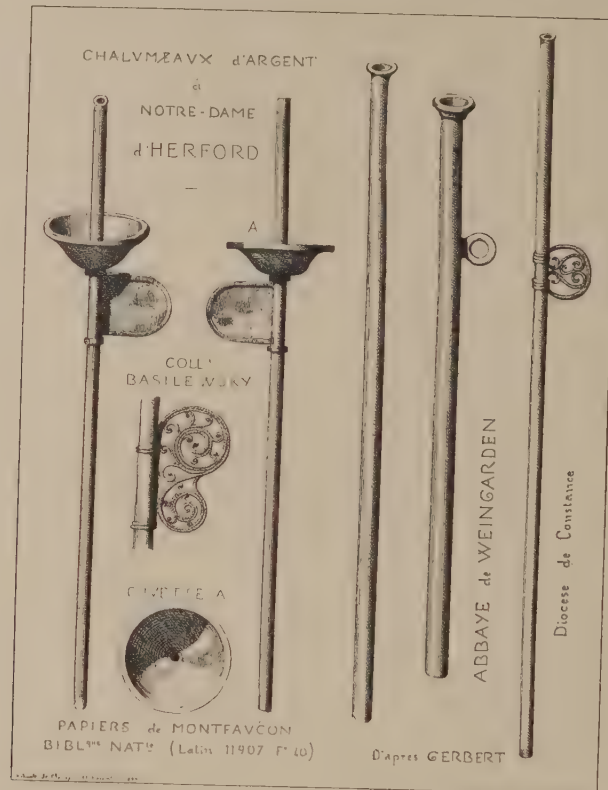


Fig. 3. Eucharistic Reeds at Erfurt, and formerly in the Abbey of Weingarten. From Rohault de Fleury, *La Messe*.

now lost but known through an old engraving (fig. 3).² The two other examples formerly at Weingarten show a handle, one a very simple, circular one, and the other more complicated and delicately worked. The fine Romanesque chalice at Wilten, in the Tyrol, is accompanied by a pair of reeds (pl. xvii, figs. 1 and 2), also of very simple form, but with a heart-shaped

¹ 105. *Un Chalumeau d'or servant à la communion sous les deux espèces, et une cuillère dorée, percée, au travers de laquelle passe le vin et l'eau dans le calice.* See H. Omont, *Inventaires du Trésor de l'Abbaye de Saint-Denis en 1505 et 1539* in *Mémoires de la Société de l'Histoire de Paris et de L'Île de France*, xxviii, 1901, p. 51.

² Gerbert, *Vetus liturgia alemannica*, 1776, p. 226. Our illustration is taken from Rohault de Fleury's reproduction of the engraving in Gerbert.

handle. We hear of the term 'angulus' used for handles,¹ and it was perhaps suggested by the handles of this type. A further variant of this type is the Calamus formerly used by the abbots of Monte Cassino (fig. 4), which has a knob of spheric outline, conforming thus with one alternative in the instructions given by Theophilus;² while yet another very simple type of the Calamus (fig. 4), with two knobs, formerly used by the pope, is also known from an old reproduction.³

At Göttweig, in Lower Austria, there is a Calamus of gilt bronze, 18 cm. long (pl. xvii, fig. 4), possibly dating from the twelfth century, which has a handle of considerable size and a circular plate to gather up any consecrated wine that may drip down the pipe.⁴ An early thirteenth-century date is that of the Calamus in the treasury of the Benedictine Abbey of St. Peter's at Salzburg, in case it was made to accompany the superb two-handled *Calix Ministerialis* belonging to the same Abbey: it is a plain tube with a handle shaped as a double loop (pl. xvii, fig. 6).⁵ To the thirteenth century also belongs the pair of Eucharistic Reeds which accompany the superb chalice and paten in the Basilewski collection in the Hermitage. I have been fortunate in obtaining from Russia a photograph of these two reeds (pl. xvii, fig. 3):⁶ it will be seen that they are of simple form, but each has a handle of exquisite design and workmanship. The most elaborate of these early examples known to me is,

¹ See above, p. 103. For the photograph reproduced in pl. xvii, fig. 2, I am indebted to the librarian of Wilten, the Rev. Blasius Marberger, O.Praem.

² F. de Berlendi, *De oblationibus ad altare communibus et peculiaribus*, Venice, 1743, plate facing p. 148.

³ *Ibid.*

⁴ I have to thank P. Vinzenz Köckoff of Göttweig for his courtesy in obtaining for me a photograph of this Calamus, and also for informing me that the hole in the handle shown in the reproduction appearing in the *Jahrbuch der Kaiserl. Königl. Central-Commission* (vol. ii, Vienna, 1857), p. 147, fig. 41, and since repeated in many handbooks—the explanation being that it was used for tying up the Calamus to the chalice—only exists in the draughtsman's imagination.

⁵ In inventories of 1462 and 1478, mention is made of three large chalices '*quondam usi in coena Domini pro populo communicando*', '*cum duabus canis*'. See H. Tietze, *Die Denkmale des Benediktinerstifts St. Peter in Salzburg*, Vienna, 1913, p. 44 sq., where curiously enough no mention is made of the one surviving Calamus. I have to thank the Erzabt of St. Peter's, Dr. Petrus Klotz, for his permission to reproduce this Calamus, and Bruder Altman Edshoffer for arranging about the photograph. Of examples known to have survived to comparatively recent times, but now missing, we may mention one in the possession of the Dominican Nuns at Metz down to the time of the Revolution and one adorned with jewellery at Prüm (cf. above p. 103); Rohault de Fleury, *op. cit.*, p. 183 sq. Indeed one may assume that after the use of the Calamus had become obsolete, examples naturally tended to go astray: and it is symptomatic that at the great Loan Exhibition of Ecclesiastical Art held at Munich in 1930, the Salzburg chalice was shown unaccompanied by its Calamus, while the catalogue made no mention of the pair of reeds accompanying the Wilten chalice, although both were exhibited.

⁶ I am much indebted to Miss Mary Chamot for her kind offices in this connexion.

THE EUCHARISTIC REED OR CALAMUS

however, the one which is in my own possession (pl. xvii, fig. 5), having previously been in the collection of that great connoisseur, the late Vicomte Bernard d'Hendecourt, and before that belonging to M. Alphonse Kann. It is 22.5 cm. long and has a handle not unlike that of the Basilewski example,

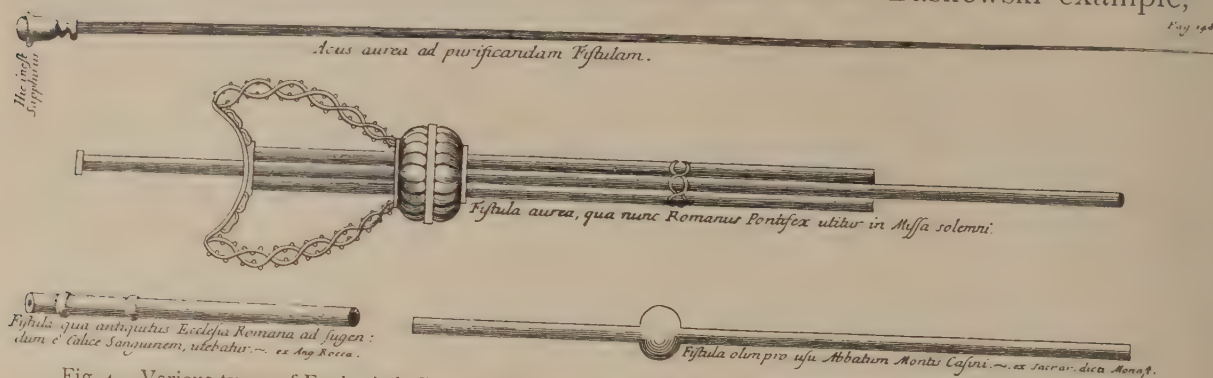


Fig. 4. Various types of Eucharistic Reeds. From an engraving in F. de Berlendi, *De oblationibus* (Venice, 1743).

but in addition is encircled by a small collar, adorned with tiny precious stones set cabochon fashion. The method of gilding is very original, displaying as it does two spiral bands of silver and silver gilt. As regards the date, I should imagine it was late twelfth or early thirteenth century; there is no real clue as to the localization of this example, but the character of the work is not entirely unlike that of the great St. Denis atelier, so one wonders if by any chance it could be connected with the abbey where the Calamus was used so long.

To the first half of the fifteenth century is said to belong a pair of Eucharistic Reeds in the cathedral of Erfurt (fig. 3); they are of the form which we know already from the example at Göttweig, though one has lost the circular receptacle surmounting the handle. The finely worked old leather case has been preserved.¹

From the end of the fifteenth century (1498) dates another pair of extreme interest, formerly in the Lambertikirche of Lüneburg in Northern Germany, and now in the Municipal Museum of that city (pl. xviii, fig. 2). Here, owing perhaps to the concept of the Calamus as the quill used for writing, and in the true spirit of late Gothic art, the reeds have been very attractively fashioned—in brass—as feathers. A notable feature is the curvilinear termination outside the chalice which allowed the fingers of the communicants to steady the vessel.²

¹ Our reproduction is taken from Rohault de Fleury (who misspells the name of the town 'Herford'). A half-tone reproduction of the pair of reeds and the leather case appears in the *Zeitschrift für christliche Kunst*, vol. xvi (1903), col. 235-6.

² I am greatly indebted to Prof. Wilhelm Reinecke of Lüneburg for his courtesy in having these two interesting examples photographed for me. The date is given by Otte, *op. cit.*, i, 220.



Fig. 1. Calamus at Wilten
(From Rohault de Fleury)



Fig. 2. Pair of Eucharistic Reeds and Chalice
at Wilten



Fig. 3. Pair of Eucharistic Reeds
in the Hermitage



Fig. 4. Calamus at
Göttweig

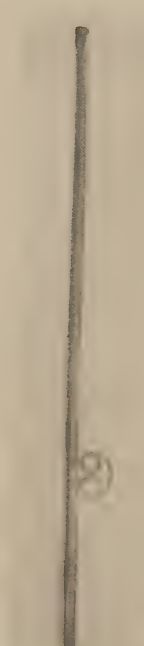


Fig. 6. Calamus, St. Peter's,
Salzburg



Fig. 5. Calamus (Dr. Borenus)

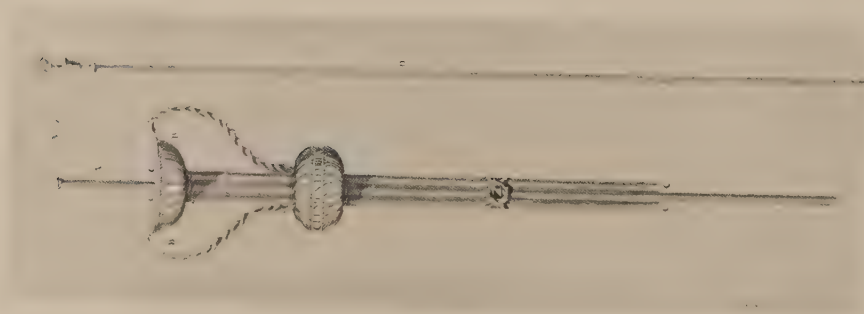


Fig. 1. Calamus of Pope Clement VIII. From the engraving in A. de La Mottraye's *Travels* (1723)



Fig. 2. Calamus in the Municipal Museum of Lüneburg (1498)

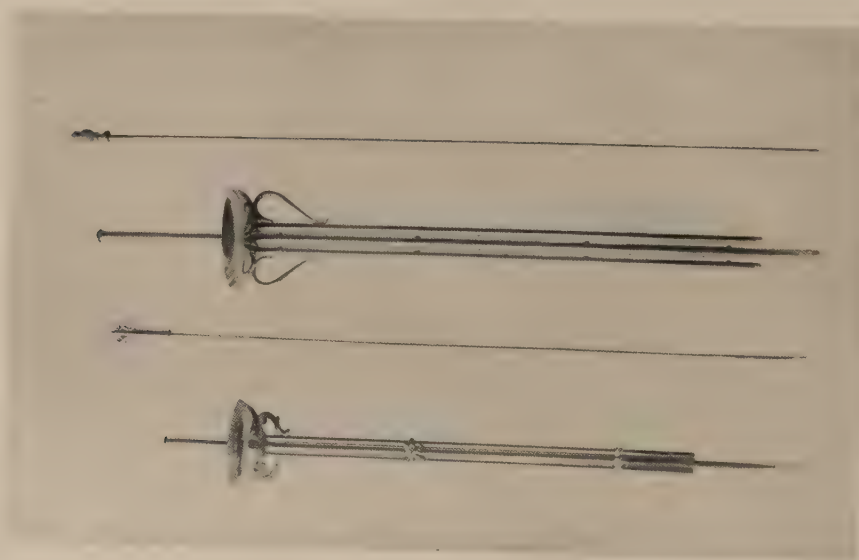


Fig. 3. Eucharistic Reeds at present used by the Pope (Treasury of the Sistine Chapel)

Among the latest German examples Otte mentions one of tin, hexagonal, dating from 1781, in the church of Marienhafte in North Frisia: but if this Calamus ever existed—which for various reasons I think very doubtful—it certainly is not now at Marienhafte.¹ I have also noted a Calamus accompanying the modern reproduction of a twelfth-century chalice in the treasury of the minster at Aix-la-Chapelle. Much the most interesting of the later examples is, however, undoubtedly the Calamus made for Pope Clement VIII (1592–1605). It is here reproduced (pl. xviii, fig. 1) from an old engraving,² and is a striking piece of late Renaissance goldsmith's work. What is particularly notable is the presence of two shorter pipes on each side of the main one, the idea being that in case any of the consecrated wine should collect in the receptacle above, it could find its way down again into the chalice through the two shorter pipes.³ The twisted handles enclose apertures, through each of which one finger is to be threaded when the consecrated wine is imbibed;⁴ lower down is a knob with the name of the pontiff, and still farther down a collar set with emeralds.⁵ With this Calamus there went an instrument known in Italian as the *Purificatorio*, a long pin with which the Calamus is cleaned with non-consecrated wine after use; it was of gold and surmounted by a sapphire. The Calamus at present used by the pope is more or less a reproduction of this one, minus the precious stones; what has become of Clement VIII's Calamus I do not know. At present there are two Calami in the treasury of the Sistine Chapel, neither of them of any great age (pl. xviii, fig. 3); and curiously enough there is none in the Museo Cristiano of the Vatican, or in the treasuries of St. Peter and the Lateran.⁶

¹ I have to thank Dr. Nikolaus Pevsner for his kindness in ascertaining this for me.

² See A. de La Mottraye, *Travels*, vol. i (London, 1723), pl. iii. A Calamus of similar type is also reproduced by F. de Berlendi, *loc. cit.*: see fig. 4.

³ Of this type was a Calamus noted in the first half of the eighteenth century by Martène and Durand in the treasury of the Abbey of Corbie (four leagues from Amiens): 'Un chalumeau qui servoit autrefois pour la communion du calice. Il avoit une petite coupe pour recevoir le précieux sang qui pouvoit tomber par megarde, d'où en ce cas il retombroit dans le calice par deux petits tuyaux' (*Voyage littéraire de deux religieux bénédictins de la Congrégation de S. Maur*, Paris, 1724, p. 61).

⁴ The type with two handles goes back at the Vatican at any rate to the thirteenth century: see the record of 1295 quoted on p. 104.

⁵ The inscription on the Calamus as given in the engraving quite definitely indicates Clement VIII. We are, however, led to conclude that this calamus reproduces a more ancient type, since the following description appears in an inventory of Pope Paul III of 1547, quoted by Gay: 'No. 236. *El calamo d'oro col quale se purifica N. Sre quando celebra pontificalmente, dove sono lettere che dicono. CLEM. VII PON. MAXI., nel quale sono 3 pietre preziose.*' Cf. Barbier de Montault, *Œuvres Complètes*, vol. i, Poitiers, 1889, p. 293.

⁶ I owe my knowledge of these facts to the information courteously supplied by Monsignor Giovanni Mercati, Prefect of the Vatican Library; and I have also to thank Mr. A. H. Smith, C.B., F.S.A., for very kindly obtaining for me the photograph of the Papal Calami now in use, reproduced in pl. xviii, fig. 3, and for informing me that the size of the longer of the two pipes is 41 cm.

I hope I have not trespassed too long upon the attention of my readers by dealing in such detail with what may perhaps be regarded as a trifle of ecclesiology, but in exploring this by-path of archaeology there is, I think, for one thing, the interest which always attaches to the investigation of ancient liturgical usages, conditioned by a variety of causes, and gradually also from a variety of causes becoming superseded. In addition, the various examples of the Calamus scattered across the centuries, which have come down to us, do disclose, I think, the distinctive features of the various phases of art, if necessarily within a very small compass, yet very clearly and characteristically. Hence there is in an enquiry of this nature the appeal which must always be felt by the archaeologically minded—the appeal which springs from the value of the small as an index to the great.

V.—*The Sanctuary of the Madonna delle Grazie, with notes on the evolution of Italian armour during the fifteenth century.* By J. G. MANN, Esq., M.A., F.S.A.

Read 27th February 1930

THE Franciscan monastery of Santa Maria delle Grazie is situated on the bank of the Mincio some five miles west of Mantua on the road to Cremona. My attention was first drawn to it by the late Baron de Cosson during a conversation in Florence in 1926, when he showed me a photograph of the interior of the church. He understood that the local tradition was that the statues were clad in armour taken from the battlefield of Marignano in 1515, and mentioned that there appeared to be some basis for this belief as the armour looked to him genuine enough, so far as it was possible to see it from the floor of the church. '*Rien n'est plus rare qu'une armure ancienne.*' The suggestion that there might be in existence a church full of armour dating from the early part of the sixteenth century, hitherto unrecorded, inspired a desire to visit the place at the first opportunity. I was unable to fulfil my intention that year, but two years later I was in the north of Italy again and was able to make the promised pilgrimage. The antiquary is well used to receiving specious accounts of treasures which on examination turn out to be utterly worthless. Perhaps objects associated with warlike exploits lend themselves even more commonly to exaggeration than most, and I was prepared to find that I had made a journey in vain. On my arrival a brother informed me that the armour on the statues was only of *carta pesta* and not worth looking at. But the first figure that I inspected showed that my hopes had been exceeded. Not only was much of the armour real, so far as one could tell through a coating of thick black paint overlaid with the dust of countless Italian summers, but its form was not that of the time of Marignano but of some fifty years earlier, when the art of the Italian armourer had reached its zenith. Last year I returned to the monastery and arranged to have a scaffold erected, and to have the seventeen figures which wear armour out of the total of sixty-seven photographed; for permission to do this I wish to record my gratitude to Monsignor Guarnieri and the Soprintendente di Belle Arti of the district.

The existing church was founded in 1399 on the site of an earlier chapel in consequence of a vow made by Federigo Gonzaga, lord of Mantua, when the city was severely visited with the plague. Federigo lost no time in fulfilling his obligation and the church was finished and consecrated in 1406. It was

118 THE SANCTUARY OF THE MADONNA DELLE GRAZIE

built in the Italian equivalent of the Gothic style, though as in most Italian buildings of this date no more than a superficial Gothic character is conveyed by the use of pointed arches and vaulting. In 1407 Carlo Malatesta of Rimini, who was ruling Mantua during the minority of Gianfrancesco Gonzaga, invited the Franciscan Order to establish themselves here.

The monastery soon prospered and received frequent benefactions, and various privileges were conferred upon it by the Church. The sanctuary was made a place of pilgrimage, and in 1409 the bishop of Mantua decreed forty days indulgence to those visiting the church on the second Sunday in August. In 1419 Pope Martin V visited Mantua on his way back from the council of Constance, where he had been elected Pope, and conferred a further indulgence to pilgrims. Five years previously the anti-Pope John XXIII had visited the church on his way to the council, where he renounced the tiara. An inscription records that in 1459 Pope Pius II, better known as Aeneas Sylvius Piccolomini, several times celebrated Mass there when touring Italy to preach his crusade against the Turks following the fall of Constantinople. It would take too long to recount the numerous illustrious pilgrims, who included the Emperor Sigismund, and on two occasions the Emperor Charles V, who presented a crown ornamented with precious stones. In 1585 it had the rare distinction at that date of being visited by three Japanese ambassadors on their way to Rome. The history of these prosperous years of the Sanctuary are recorded by one of the brothers, Fra Ippolito Donesmondi, who wrote a detailed and enthusiastic account of his monastery, published in 1603, and of which there is a copy in the British Museum Library.¹ In 1521 Federigo Gonzaga decreed a fair here, and it is to this that the little village of Grazie, which clusters round the piazza outside and takes its name from the monastery, owes its beginnings. The market brought with it the erection of the arcade along the west front of the church and later along the sides of the piazza. Shortly after 1521 the galleries which give the interior of the church its special character were built, and so transformed its appearance internally from a Gothic to a Renaissance building.

Donesmondi records that one of the friars, Francesco d'Acquanegra, found a use for the large quantity of wax, which had been offered by worshippers and had accumulated in the course of many years, by casting it in moulds in the forms of hearts, hands, and other shapes of a light orange colour, mixing it with

¹ *Historia dell'origine, fondatione, et progressi del famosissimo Tempio di S. Maria delle Gratie, in compagnia di Curtatone fuori di Mantova. Con la descrizione del Monastero dignissimo, sue giuridictioni, et altre attinenze della sopradetta Santa Cara, per il M. Rev. Padre Frat' Hippolito Donesmundi da Mantova, lettore theologico generale, de Minori Osservanti. Composta in Casale, per Bernardo Grasso, stampator Ducale MDCIII.*

other ingredients to make it durable, and applying them to the columns and arches of the gallery as a form of ornament. He also instituted the series of statues which stand in the niches between the columns (pl. xix). The belief that these also were of wax attracted the attention of Spire Blondel, who contributed an article on 'Les Cires' to the *Gazette des Beaux-Arts*, vol. xxvi (1882), p. 265, but he records that on writing to the Prior, Don Francesco Mori, for a description of the figures, the latter replied (correctly) that the material used was *papier mâché*, not wax. This did not prevent Dr. Julius von Schlosser from including a mention of them in his *Geschichte der Wachs-Portraitmalerei* published in the Vienna *Fahrbuch*, vol. xxix (1909), where he illustrates a general view of the interior of the church and two of the figures in the upper row. He also mentions the church in his little book *Kunst- und Wunderkammer der Spätrenaissance* published in 1908. But so far as I know no one has made mention of the armour worn by these figures.

In 1810 the monastery came to the end of its reign of prosperity. It was suppressed by Napoleon and a large part of the building was pulled down. Three chaplains alone were allowed to remain of the once numerous fraternity.

In 1825 the church was re-established, and in the same year a new and abridged edition of Donesmondi's book was published.¹ The abridgement is welcome, for although one cannot but be touched by Donesmondi's love for his monastery, which he clearly believed to be the most wonderful in the world, he never fails to use ten words to express his meaning where three would suffice. The interior was restored, and further restorations have been carried out at intervals during the last century, notably in 1858. In 1886 the *Frati Minori Osservanti* were again installed and occupy it to-day. How much these restorations have affected the statues it is difficult to say. That the present condition of some of them dates from a later time than 1530 is clear from the fact that armour of the last years of the sixteenth century is included in their apparel. The verses now inscribed² in the cartouches below them are not those given by Donesmondi, who quotes Italian stanzas of four lines or brief Latin inscriptions in prose. Also the position of some of them seems to have been altered, if Donesmondi's description is accurate. But that they are substantially the same as in his time, we can gather from the fact that twelve at least can be identified from his description. Others he briefly describes as *fantaccino* or *soldato di Borbone*, while he specifically mentions eleven as being *tutte armate*. The figures were probably re-arranged during one of the restorations of the church, when

¹ *Compendio storico del Tempio della B.V. Maria delle Grazie . . . estratta del Donesmondi*. Mantua, 1825.

² The existing verses of three lines of Italian are printed in the 1925 guide.

120 THE SANCTUARY OF THE MADONNA DELLE GRAZIE

those in textile garments were doubtless redressed, but the armour on the military ones retained and the missing parts replaced with *papier mâché*.

Donesmondi's explanation is that they represent persons who had occasion to remember with gratitude the clemency of the Madonna delle Grazie. Pius II, Charles V, Philip II, and the Connétable de Bourbon (who was related to the Gonzagas by marriage) are obviously included as being distinguished visitors or benefactors. The military figures and effigies in costume undergoing torture or execution are explained as members of de Bourbon's army, who had followed him to the sack of Rome in 1527; on their return the stragglers were set upon by the peasants and massacred, by the 'just Judgement of God' he adds. One is reminded of Callot's terrible etching in the set of *Les Misères de la Guerre*, where he represents the revenge of the peasants on the soldiery who had pillaged their homes and laid waste their fields. Apparently a battle took place near by at Borgoforte between a party of disbanded soldiers and the local inhabitants, and the former through their prayers to the Virgin were enabled to escape. Some of these statues are believed to commemorate their gratitude, though one feels that it is unlikely that they would have had them set up when once safely home. Possibly a number took refuge in the sanctuary and paid a ransom for their lives, and the event was commemorated in this way. The date corresponds with the period when the nave was being redecorated by Francesco d'Acquanegra, and the story is borne out by the inscriptions beneath some of the figures describing the horrors of war from which the mercy of the Virgin had saved them. Charles de Bourbon himself, when leading reinforcements to the imperial army in the year before the battle of Pavia, was surprised by a French detachment at Governolo and barely escaped with his life to Mantua. His statue is dressed *à l'antique*, or as the Italians say *alla romana*, in gilt casque and cuirass of *papier mâché*. The Gonzagas were usually staunch supporters of the imperial cause, though they dissociated themselves from the march on Rome.

Charles V is represented in the same costume with sceptre in hand in the top row (pl. xxxii, fig. 1). Other figures in the upper row are Pope Pius II (pl. xxxii, fig. 2), Philip II of Spain, a cardinal, and a number of ladies in rich costumes, of whom I can find no mention in Donesmondi and the later guide-books. The abridged guide of 1825 gives the total number of statues as 44, whereas I counted 67, so far as the light of an autumn afternoon permitted. This figure of 44 appears to have been copied without confirmation from one book to another, as it is also given in the latest edition of Baedeker. The number of statues on the first row is 41.¹ Donesmondi describes 49 and adds

¹ The guide of 1825 included with the first row the three figures of the second row over the entrance to the Chapel of the B.V.M., which breaks the sequence of the lower row.

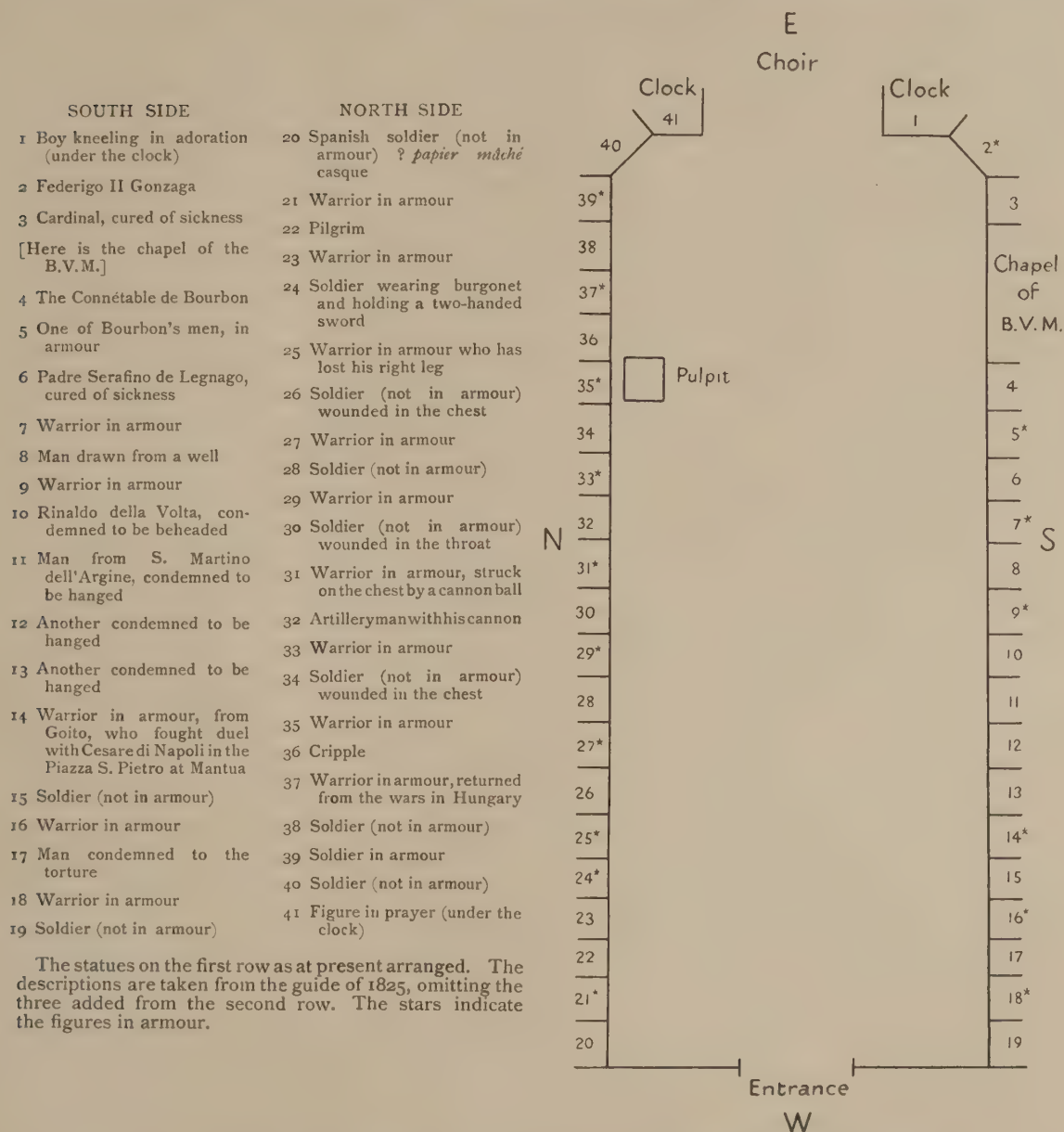


FIG. 1. Sketch-plan of the interior of the Church (not to scale) showing position of the figures.

that there were other statues higher up, but these, being less visible, he does not describe. A lithograph of about 1850 by G. Brizeghel after M. Moro shows the interior of the church as it is to-day.

Originally the sanctuary possessed eight large statues of silver presented by members of the Gonzaga family, representing Duke Guglielmo, Don Fer-

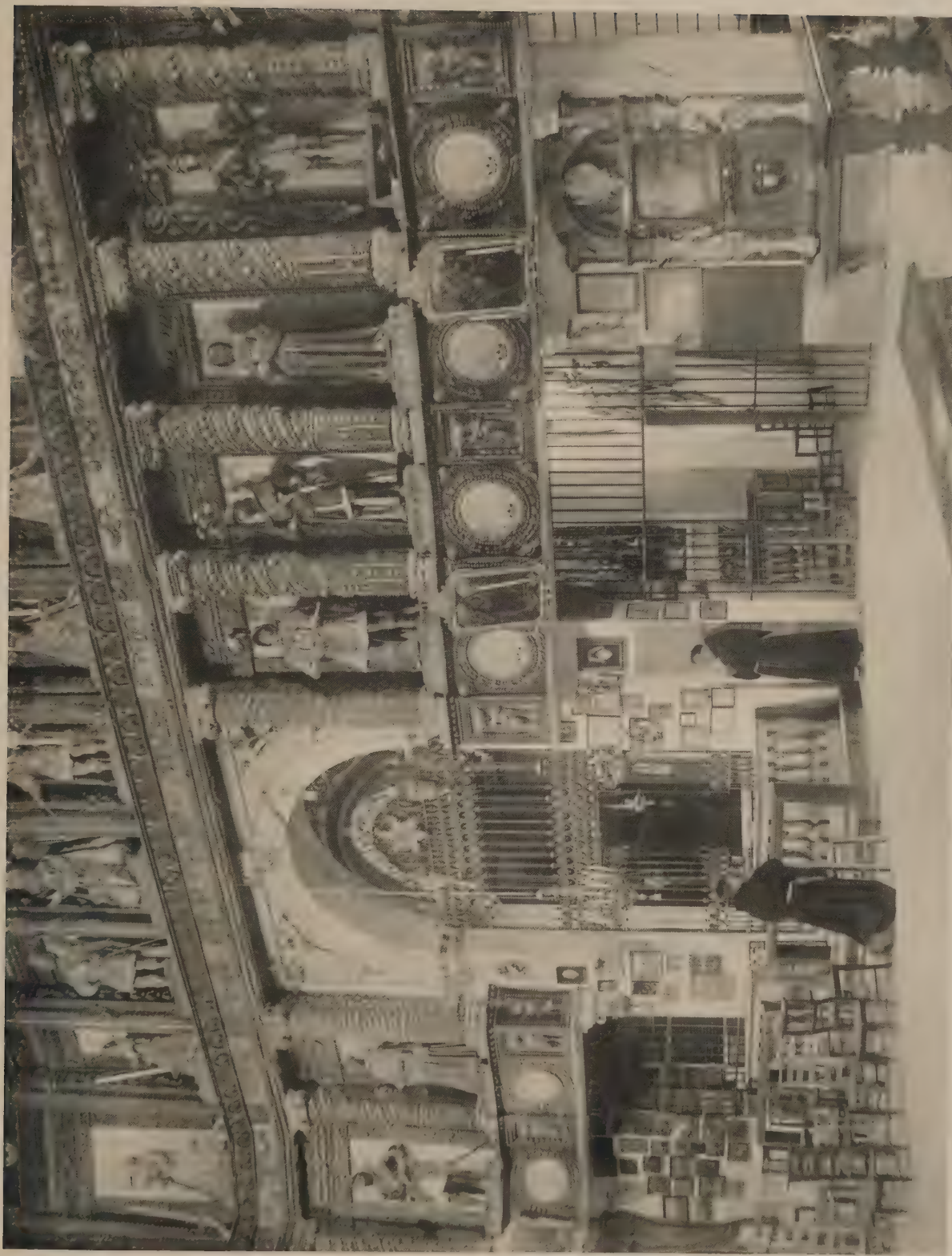
rante, the marquis Francesco, Duke Ferdinand, two sons of Don Ferrante, a very large one of Ferrante Gonzaga, marquis of San Martino, offered in return for three mercies received, and one of a bishop '*mirabilmente lavorata*'. No trace of these now remains. They probably did not stand on the galleries among the others, for they are not mentioned as being there in Donesmondi's list. Presumably they have suffered the same fate as the humbler wax offerings of the faithful and have been melted down, but whether they survived until the Napoleonic wars one cannot say.

The most intrinsically interesting are the seventeen figures in armour, all on the lower stage. Whereas the other thirty-nine are dressed in textile fabrics and *papier mâché*, these are clad in real armour, and much of it is of great value. The first armoured figure is the second from the east end and is said to represent Federigo II, marquis of Gonzaga (1519-40), during whose reign the work of building and decorating the galleries was carried out. Federigo commanded the army which relieved the city of Pavia in 1522, and commemorated the event by a tablet near the west door of this church, and incorporated in it several cannon balls in the form of a cross. The inscription beneath his statue says that he offered up the spoils of war to the church in gratitude for his safe return, and it has been assumed that this means that he and his soldiers presented their armours to the church.

*Co' soldati Gonzaga il voto scioglie,
Salvo dall' armi del Tesino in riva,
E al Tempio dona le guerriere spoglie.*

The armour on the figures, however, does not, except in the case of a few pieces, date from this time. A large part of it is considerably earlier, while other pieces are later. It seems more probable that Francesco d'Acquanegra, who began the series of statues, was allowed to make use of a quantity of armour which had become obsolete, probably from one of the stores of armour kept by the Gonzagas for the garrisons of their castles, the inventories of which are still to be seen in the Archivio Gonzaga at Mantua. The later armour would be added when repairs or additions became necessary in the course of time.

Federigo's statue wears a complete suit of the Milanese fashion of the fifteenth century, with a fine armet with high cheek plates meeting at the chin, and with the visor raised (pl. xx, fig. 1). I have put beside it for comparison a drawing by Perugino preserved in the Royal Collection at Windsor (pl. xx, fig. 2). It is a study for his St. Michael in the National Gallery. It is also interesting in that it shows the mature masculine head of the model employed to wear the armour for him to paint from, and not the youthful and idealized features of the saint in the picture, which might almost have been taken from a female model. The Grazie armour exhibits the same large pauldrons, which extend



Preni

Interior of the Church of Santa Maria delle Grazie. South side, showing the entrance to the chapel of the Virgin

Published by the Society of Antiquaries of London, 1930



Fig. 1. The second figure, wearing armour of the second half of the XVth century. Called the Marquess Federigo II Gonzaga

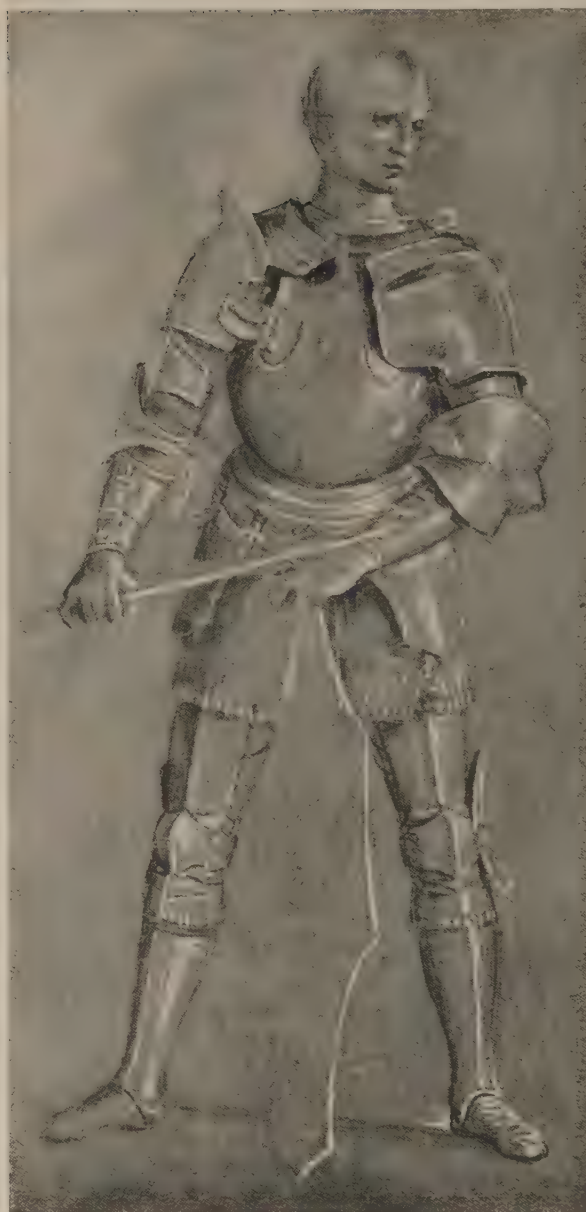


Fig. 2. Drawing by Perugino in the Royal collection at Windsor. A study for the St. Michael in the National Gallery

far behind, with articulated lames near the neck, and a large reinforcing plate with upturned edge on the left shoulder; the elegant reinforcing piece on the left elbow (compare also that described and illustrated by Mr. Foulkes in his account of the store of Italian armour found at Chalcis, in *Archaeologia*, vol. lxii, pl. LV), the breast-plate with reinforcing placate cut away to allow for the lance rest. Note also the large and beautifully shaped tassets, miscalled 'tuiles', the typical Milanese style of mitten gauntlet, and the large wings to the knee-cops. Attached to the bottom lame of the knee-cops in each case is a narrow plate overlapping upwards with an engrailed upper edge. The bottom border is pierced with a row of small holes for attaching the mail fringe, which is a characteristic feature of Italian armour of the time, and will be referred to later. One row of links remains in place (fig. 3). Donesmondi describes this figure as holding a mace, but this is now missing, and the rude and uninteresting sword which is attached to his left arm is probably a fairly recent substitute. Sir Guy Laking has illustrated some of the many Italian pictures of the second half of the fifteenth century which show armour of this type.¹ One of the best-known armours to survive is that of Roberto di San Severino at Vienna, bearing the marks of the Misaglia of Milan, which can be compared plate for plate with the suit at Grazie, except that Roberto wears a painted German sallet and our figure an Italian *armet à rondelle*.

The next figure in armour (pl. XXI, fig. 1), which is the fifth from the east end on the south side, is described in the verses below as one of Bourbon's soldiers who came back safely from the battle of Pavia.

*Della cruda tenzon sotto Pavia,
Or che per tua pietà salvo ritorno,
Quest' armi accogli e la sembianza mia.*

The armour in this case is a mixture. The tassets are of the sixteenth century and the legs Maximilian, but the upper part is if anything earlier than the one last described. He wears an *armet* of good form (the plumes, which are of wood, are of course additions): the ample breastplate with cusped placate or paunce and its own skirt of broad lames with cusps in the centre, the left pauldron with large reinforcement fastened by a staple and with a diagonal ridge across its surface, the large reinforcement to the left elbow (the bridle arm) and the right with that curious strengthening of the inner side of the wing, accurately shown on English brasses of the period by a dentated line.



Fig. 2. Detail of the second figure.



Fig. 3. Detail of the second figure.

¹ *Record of European Arms and Armour*, 1920-2, vol. i, figs. 201, 218, 224-35, 237, 238.

Mr. C. R. Beard in a review of the catalogue of the Churburg Armoury¹ published in the *Connoisseur*, December 1929, very pertinently drew attention to the resemblance between the Churburg armours of this fashion and English brasses of about 1440, thereby suggesting that the date of 1450 given to these armours



Fig. 4. Brass of Richard Fox, †1439.



Fig. 5. Detail of brass of Richard Dyxton, †1438.

was at least ten years too late. The brass of Richard Fox, †1439, at Arkesden, Essex (fig. 4), shows the same unsymmetrical arms, the large pauldron with diagonal ridge and elbow-cop on the left side, the more mobile right arm with the strengthening of the inside of the wing, and so on. This brass is one of a distinct group all clearly from the same London shop. Some of them even show the staples fixing on the pauldrons and left elbow guards or gardebrace. Those of Sir R. Delamare, †1435, in Hereford Cathedral, and of Richard Dyxton, †1438 (fig. 5), at Cirencester, have certain of these features, though not all. The latest is that of Roger Bothe, †1467, at Sawley, Derbyshire. Others are at Mepshall, Bedfordshire; Albury, Surrey; Ilminster, Somerset; Lanteglos-by-Fowey, Cornwall; Fladbury, Worcestershire; Newland, Gloucestershire; Chalgrove, Oxfordshire; Wytham, Berkshire; Margate, Kent; and Isleham, Cambridgeshire. A variant on a smaller scale is that of Thomas de St. Quintin, †1445, at Harpham, Yorkshire. The breastplate of the Grazie armour is round, almost heavy, with the paunce or placate cusped in three points, which is usually found

¹ *The Armoury of the Castle of Churburg*, by Oswald Graf Trapp, edited by J. G. Mann, 1929.

among the earlier Milanese armours of about 1450, and which Laking suggested as a feature of the work of Tomaso Missaglia. It can be compared with those on the armours nos. 19, 20, and 21 at Churburg. The interesting mitten gauntlets on this armour (fig. 6) are probably of the turn of the century. The cuisses are

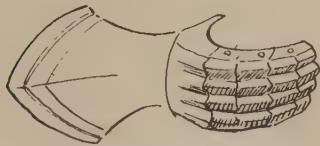


Fig. 6. Detail of the fifth figure.



Fig. 7. Detail of the ninth figure.



Fig. 8. Detail of the ninth figure.

fluted, and so is the final lame of the knee-cops. The greaves end at the ankle, where they have a narrow roped border, which is a feature of Italian sixteenth-century armours.

The armour on the ninth figure (pl. XXI, fig. 2) presents a third Gothic armet, unfortunately sunk behind a badly fitting gorget of later date. The breast is a cusped mid-fifteenth century one, like the last described, and retains its skirt of lames. The tassets are sixteenth-century additions. The arms are also Italian Gothic (figs. 7 and 8), and the pauldrons extend far over the shoulder-blades behind, a feature not shown in the photograph but which is illustrated on the back view of Roberto di San Severino.¹ The cuisses and knee-cops are also Gothic, but the greaves, which are cut off straight round the ankle, are later. The gauntlets are good examples of the fifteenth century, of mitten form. His inscription relates how when lying smitten to death by the sword at Pavia he prayed to the Virgin and survived.

The armour on the thirty-fifth figure (pl. XXI, fig. 3) also dates from the middle of the fifteenth century. He wears large pauldrons of the Milanese type with small lames near the neck (fig. 9); a heavy breast with pointed pounce, turn-overs, but no gussets, and a buckle for the strap attached to the point of the pounce, and skirt of lames of the middle of the fifteenth century. The lance-rest is missing. The helmet and legs are of *papier mâché*.

The next suit in point of date is on the seventh figure (pl. XXII, fig. 1), which as at present set up looks rather a wreck, but the armour shows certain interesting features. The armet is again of the fifteenth century. The breast is also of Italian Gothic type with bold turn-overs to the gussets at the arm-pits, but the existence of gussets probably places it later than those already mentioned,

¹ Böheim, *Waffenkunde*, fig. 162.

though still within the fifteenth century. The left pauldron is missing, but the right is of fine Gothic form and clearly shows the metal strengthening strip, or *lisière d'arrêt*, riveted to the lames near the neck. The pointed tassets are very fine, and the legs are exceptionally well preserved. The cuisses show a brilliant bluing where they have been protected by the skirt. The wings of the knee-cops have large wings with typical Gothic flanges. Both knee-cops retain their original mail fringes complete, and the greaves their mail shoes (fig. 10).¹ I only know of one other instance of the survival of mail shoes of this date, and that is on armour no. 20 at Churburg. Genuine fringes at the knees are nearly as rare, and the only other case I can cite is on a pair of legs on a composite suit which was lot 1673 in the Richards sale at Rome in 1890 (pl. xxviii, fig. 3). Angelucci states that it came from the church of San Niccolò at Tolentino (not the Cathedral as stated in the sale catalogue), where it was associated with a heart burial believed, but on no certain grounds, to be that of the condottiere Niccolò da Tolentino.² Niccolò da Tolentino is familiar to us as the central figure of Uccello's picture of the rout of San Romano (formerly called the battle of Sant' Egidio) in the National Gallery, and from his equestrian portrait in armour by Andrea del Castagno opposite to that of Sir John Hawkwood in the cathedral at Florence. The legs might have been his, so far as the date is concerned, but the rest of the armour is a sixteenth-century *anime* and therefore a century later. I am told that there are two other instances of original mail fringes in a collection in France. I say original advisedly, as it has been a favourite trick of restorers to add these fringes, often in cases where they were never meant to be. The fringes on the composite Gothic armour no. 340 in the Wallace Collection are a recent addition, and I should imagine the same to be the case with the composite Gothic armours nos. 3902 and 3907 in the Museo Stibbert. The fashion was not confined to Italy, but appears at a later date on the armour A 26 of Charles V in the Real Armeria at Madrid. The Augsburg armourers sometimes engraved an imitation of mail on the lower lame of the knee-cops, as seen on the armours of Andreas, Graf von Sonnenburg (no. 175), and Friedrich III, Graf von Fürstenburg (no. 200), both at Vienna, Friedrich, Herzog zu Liegnitz, at Berlin, on the Churburg armour no. 97, and in a design by Hans Burgkmair for an equestrian statue of the Emperor Maximilian, dated 1510. The earliest instance I have been able to find of this

¹ 'Quant au harnois de jambes, l'une des façons est clou devant et derrière par le bas, ainsi que on le fait à Millan, et a grande gardes au genouil et un pou de mailles sur le cou du pié.' René de Belleval, *Traité Anonyme du Costume Militaire de 1446*.

² A. Angelucci, *Le armi del cavaliere Raoul Richards alla mostra dei metalli artistici di Roma*, 1886.



Fig. 1. The fifth figure



Fig. 2. The ninth figure



Fig. 3. The thirty-fifth figure



Fig. 4. The fourteenth figure



Fig. 1. The seventh figure



Fig. 2. The sixteenth figure



Fig. 3. The twenty-seventh figure



Fig. 4. The twenty-first figure



Fig. 5. The thirty-third figure

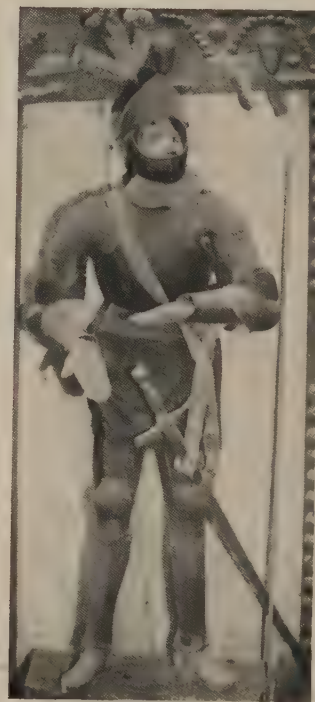


Fig. 6. The twenty-ninth figure.

mail fringe appears on the tomb of Giovanni Cose, †1418, from Naples, now preserved in the Louvre (pl. xxiii, fig. 2). It is also interesting as illustrating a very early example of Italian armour of the 'Missaglia' type, and will be referred to again.

The armour on the fourteenth figure in succession (pl. xxi, fig. 4) wears a fine Gothic armet, the fifth. It is probably nearer the end of the fifteenth

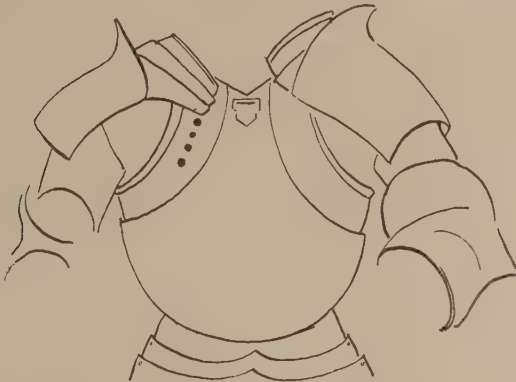


Fig. 9. Detail of the thirty-fifth figure.



Fig. 10. Detail of the seventh figure.



Fig. 11. Detail of the fourteenth figure.

century than those on the second, fifth, and seventh figures, as it is not so high in the bevor and so has not the square piece cut out opposite the mouth. The breast is in one piece, with fine turn-overs to the neck and gussets, and therefore probably belongs to the last quarter of the century. The skirt of lames and tassets is also Gothic, but the arms are of the early part of the sixteenth century. Note the very large pauldron or grand guard on the left shoulder. The gauntlets are roped and etched, and belong to the second half of the sixteenth century. The legs are fine Gothic ones, with *lisières d'arrêt* at the top of the cuisses, large side wings, and the overlapping lower lame of the knee-cops and bottom edge of the finely modelled greaves are pierced for mail, which is now missing (fig. 11). Donesmondi explains that he represents a local champion from Goito who in 1521 opposed Cesare di Napoli in single combat in the Piazza San Pietro at Mantua, and, commending himself to the Virgin, emerged victorious. The existing verses below read:

*Per te cingo quest' armi, e tanta gloria
Vincendo ottenni, a te consacro adesso
Del vincitor il vinto e la vittoria.*

The sixteenth figure (pl. xxii, fig. 2) wears in place of an armet a *papier mâché* copy of one. His gorget, breast, skirt of lames, and arms are fluted armour of the so-called Maximilian style and therefore contemporary with the period of the redecoration of the church. But the legs are fine examples of the

fifteenth century with *lisières d'arrêt* to the cuisse and extra lames up to the groin (fig. 12), and might with advantage be exchanged with those on the fifth figure, which were Maximilian and probably belong to it. The back plates of the greaves are missing and are supplied by *papier mâché*.

The twenty-seventh figure (pl. xxii, fig. 3) has *papier mâché* helmet and legs, but the breastplate is a fluted one of about 1510 with lance-rest. The arms are Gothic and of fine form, but their appearance is rather altered by the addition of a left pauldron with upstanding neck-guard, which is later and belongs to the earlier sixteenth century. The right pauldron extends far behind in the Italian manner and has a metal strip or *lisière d'arrêt* riveted across it.

The twenty-first figure (pl. xxii, fig. 4), which is the second from the west end on the north side, wears a sixteenth-century close helmet, peascod breast with lance-rest and arms of the same date, and must therefore have been set up after the time of Francesco d'Acquanegra. But the legs, like those on the sixteenth figure, are Gothic, and consist of two left cuisses, both of fine form with *lisières d'arrêt* and an extra plate with strong turn-overs at the top (fig. 13). The right one shows traces through the paint of a triple Milanese mark. This was the only mark I was able to discover. The knee-cops have very sharp ridges in front, large wings, and the extra plate pierced for a fringe of mail.

The twenty-third figure wears an armet of the fifteenth century (the sixth), a Gothic breastplate with plain pointed paunce, early sixteenth-century arms, and legs of *papier mâché*. The sword, as usual, is a wooden dummy.

The thirty-ninth figure, which is second from the east end on the north side, is the last in the series to wear armour. The interesting feature in his case is that he wears one of those rare breastplates hovering between the Gothic and Maximilian fashions with two pleat-like flutes down the front (fig. 14). In an article in *Archaeologia*, vol. lxxix, I described three others: one from Rhodes, now with the other Rotunda armour in the Tower, one on the so-called Marignano suit in the Doge's Palace at Venice, and one on the composite Gothic armour no. 3910 in the Museo Stibbert. The arms are of the sixteenth century and have been reversed. The helmet and legs are of *papier mâché*. He is rather naively described as a warrior returned from the Hungarian campaign and determined to keep well away from all wars in future, which strikes a rather modern note that may be explained by the verses having been written shortly after the close of the Napoleonic wars:

*Tornando un di' dall'ungaro paese,
A te l'arme sacrando io già proposi
Viver' lontan' da militari offese.*

The eighteenth figure represents a soldier, who, according to the inscrip-

tion, lost one leg in battle, prayed to the Virgin and recovered. He wears a *papier mâché* armet which has suffered from the effects of time, a breastplate with gussets and arms with large shell elbow-cops of the early sixteenth century. The long tassets of the same date are concealed by an apron. The right leg is of *papier mâché* and the left is a wooden stump.

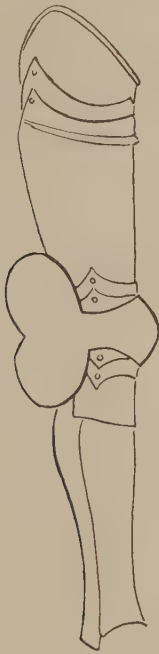


Fig. 12. Detail of the sixteenth figure.



Fig. 13. Detail of the twenty-first figure.



Fig. 14. Detail of the thirty-ninth figure.

The twenty-ninth figure (pl. xxii, fig. 6) has a real helmet, but in this case a late example of the end of the sixteenth century. The plain globose breastplate and skirt of lames are of the late fifteenth or earlier sixteenth century, the arms, cuisses, and knee-cops of the sixteenth century, the greaves *papier mâché*.

The thirty-third figure (pl. xxii, fig. 5) is interesting as he wears a very protuberant globose breastplate and long tassets of the type found on the engraved group of armours of the opening years of the sixteenth century.¹ The arms are of the sixteenth century, the helmet and legs of *papier mâché*.

The thirty-seventh figure wears an Italian Gothic armet opening down the chin, the seventh. The pauldrons and arms are of the late sixteenth century, the breast might even be early seventeenth, the legs are *papier mâché*.

The thirty-first figure has a helmet and legs of *papier mâché*. The breastplate is a fluted one of the Maximilian period and has a large dent in

¹ See *Archaeologia*, vol. lxxix, pls. LXXIX, LXXI (2), LXII (1), and p. 225, fig. 1.

the middle. This is explained in the verses below, and also by Donesmondi, by the fact that he was struck by a cannon ball on the field of battle and in danger of death, but prayed to the Virgin and survived. One would like to know whether the dent on the breastplate suggested the idea, or whether it was inflicted deliberately to illustrate the story. The arms are of the second half of the sixteenth century with volutes on the pauldrons.

The twenty-fifth figure has a *papier mâché* helmet, late sixteenth-century peascod breast with lance-rest, pauldrons, and arms of the same date, with *papier mâché* legs; and is altogether of lesser interest.

The twenty-fourth figure wears a burgonet without other armour, is clad in a landsknecht's costume, and holds a large two-handed sword. This is the only genuine weapon of interest.

This completes the armoured figures. The others have less intrinsic interest, though they are more dramatic and afford an interesting commentary on the times. One shows a man put to the torture by having fire applied to his feet in the stocks; one a soldier with two knife wounds in his chest; another an artilleryman with his cannon; another a man at the block, who, on receiving the first stroke of the axe cried *Grazie*, and was thereupon reprieved; another a man sentenced to be hanged, but on the rope breaking three times, by the divine intercession of the Virgin, he was released. There is one that has a more present interest as it commemorates a certain father Serafino of Legnago, who, according to Donesmondi writing less than a century later, assisted in the decoration of the galleries with wax. He fell gravely ill, but made a remarkable recovery and placed the statue in position with his own hands as a thank-offering.

If the armour at Grazie were cleaned and well set up it would present a very different appearance from what it does at present, and would almost certainly reveal some interesting armourers' marks. Nine out of the seventeen suits include Gothic pieces, in some cases virtually complete. There are seven Gothic armets, three armours are preponderantly Maximilian, and the remainder miscellaneous of the sixteenth century.

In his chapters VI and VII published in 1920 Sir Guy Laking collected together and illustrated the six Italian Gothic armours of which he knew, namely, those of Friedrich der Siegreiche at Vienna, the one at Berne (which he dated c. 1450), the Carrand-Spitzer-Dino suit in the Metropolitan Museum, the armour B 19 at Turin (only the upper half of which is Gothic), the armour of Roberto di San Severino c. 1470, and that of Ferdinand of Aragon at Vienna. But since then four Gothic suits in the Churburg armoury (catalogue of 1929, nos. 18-21) and now the armours at Grazie can be added to the material available for studying the evolution of Italian armour.

It is now possible to follow in detail its development from the pre-Gothic Churburg armour no. 13 of the end of the fourteenth century, and by matching existing armours with contemporary illustrations, continue until the sequence is complete. It was during the first half of the fifteenth century that the Missaglia workshop achieved its dominating position at Milan and set its mark upon the craft.

The *Fior di Battaglia* of Maestro Fiore dei Liberi, which is dated 1410, includes several vigorous drawings of combatants in complete harness of plate.¹ Some of these show the old hounskull or pig-faced bascinet, and others an open bascinet with a very high bevor, from which the visor has probably been removed on the hinge and pin principle. In most cases the arming of the limbs does not differ markedly from that in use at the end of the fourteenth century, and is still symmetrical, but on folio 25A (Novati, p. 167) one notes the use of a pauldron on the left shoulder (very large on folio 25B), and for the sake of mobility no pauldron at all on the right (fig. 15).



Fig. 15. Duellist, from the MS. of Maestro Fiore dei Liberi, 1410.

The tomb of Giovanni Cose (pl. xxiii, fig. 2), †1418, already alluded to, shows a distinct advance. He wears a large laminated pauldron on the left shoulder and a smaller one on the right. Both are worn over the short sleeves of mail so frequently found in Italian sculpture and painting, and are independent of the vambraces. They are furnished with narrow metal strips, or *lisières d'arrêt*, riveted across them parallel with the top edge. The vambraces are symmetrical with heart-shaped wings to protect the inside of the elbow. The gauntlets are still fingered, and have not given place to the rounded mitten gauntlets characteristic of the later Milanese work. The breastplate has a V-shaped *lisière d'arrêt*, a lance-rest, and a very incipient placate or paunce attached by a strap. The legs are plain, with mail fringes to the knees and mail sabatons attached to the greaves. Most of these features are reproduced on the Churburg armour, no. 18 (pl. xxiii, fig. 3). The only material difference is that the latter does not show the large left pauldron, but has the shoulders protected by narrow lames with extensions over the armpits like besagues.

Another valuable illustration of this date is the painting of St. George by

¹ Reproduced on pp. 167-73 of Francesco Novati's facsimile edition of the MS. published by the Istituto di Arte Grafici of Bergamo in 1902.

Gentile da Fabriano, †1427 (pl. xxiii, fig. 1), which is one of four figures of saints in his altar-piece in the Uffizi gallery. It shows an armour very close to the tomb of Giovanni Cose in its build and fashion, including the details of the *lisières d'arrêt* on breast and pauldrons. The evidence of these two documents leads one to believe that the Churburg armour can be dated as early as 1420. Count Trapp stated on p. 24 of his catalogue of the Churburg Armoury that the six breastplates there with *lisières d'arrêt* were the only ones now to be seen, but since its publication my attention has been drawn to another preserved in the City Armoury in the Rathaus at Vienna. In this instance it is riveted high up on the neck, and breast and back have been restored. Illustrations of this feature are not uncommon, and Jacopo Bellini gives a clear representation of it in one of his drawings in the Louvre (pl. xxiii, fig. 4).

The next document is the Bedford missal, which bears the arms of John, duke of Bedford, and his first wife, Anne of Burgundy, and is believed to have been illuminated as a present from the duke to his bride on the occasion of their marriage in 1431 (Laking, *Record*, fig. 221). Although painted in France it shows an Italian armour with large unsymmetrical pauldrons, the left one with a rondel fixed upon it as in the St. George, but otherwise still closely resembling the Churburg armour, no. 18, and that of Giovanni Cose. This rondel on the pauldron is a marked feature of Italian armours of the second quarter of the century, and is specifically alluded to in an indenture between Tomaso Missaglia and Giovanni dei Corrienti, dated 1439.¹ It is shown on Andrea del Castagno's frescoes in the convent of Sant' Apollonia at Florence (Laking, *Ibid.*, figs. 219 and 220), and in great detail and variety in the sketch-book of a Paduan artist of the first half of the fifteenth century preserved in the Camera delle Stampe at Rome² (pls. xxiv, xxv). These drawings show plate tassets (which begin to appear on English brasses about 1430),³ and from

¹ Quoted by the Baron de Cosson in *Burlington Magazine*, xxxvi, p. 149, and the writer's preface to *Armoury of the Castle of Churburg*, English edition, 1929, p. xiv.

² A. Venturi, *Le R. Gallerie Nazionali*, vols. iii and iv, 1901 and 1902. Dr. Venturi attributed them to the Paduan artist Giusto Menabuoi (†1397), believing them to be studies for his frescoes in the Church of the Eremitani, which were destroyed early in the seventeenth century. Dr. J. von Schlosser challenged this attribution in the Vienna *Jahrbuch*, vol. xxiii, 1903, p. 327, among other arguments pointing out that the armour could not have been drawn by an artist of the second half of the fourteenth century. But Venturi maintained his opinion in *L'Arte*, 1903, pp. 79-82, and rejected von Schlosser's contention about the armour on the ground that there was no material change in the fashion of arming between the end of the fourteenth and the first half of the fifteenth century. No one who has studied the representations of Italian armour during these years will agree with this statement, and recent scholarship seems to have abandoned Venturi's attribution (van Marle IV, pp. 172-4, VII, p. 399).

³ Brasses of John Poyle, Esq., †1424, Hampton Poyle, Oxon (brass probably set up ten years later); John Cople, Esq., †1435, Cople, Beds.; John Leventhorpe, Esq., †1433 (brass dates from the death of his widow in 1437), Sawbridgeworth, Herts.



Anderson

Fig. 1. St. George, by Gentile da Fabriano, †1427



Giraudon

Fig. 2. Tomb of Giovanni Cose of Naples, †1418, in the Louvre

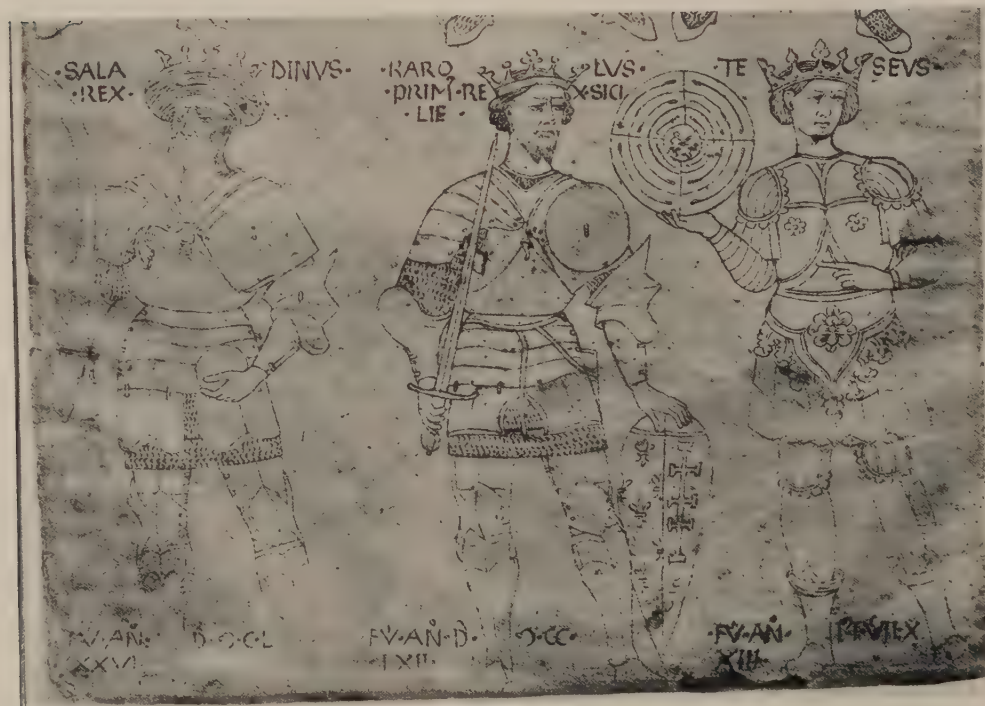
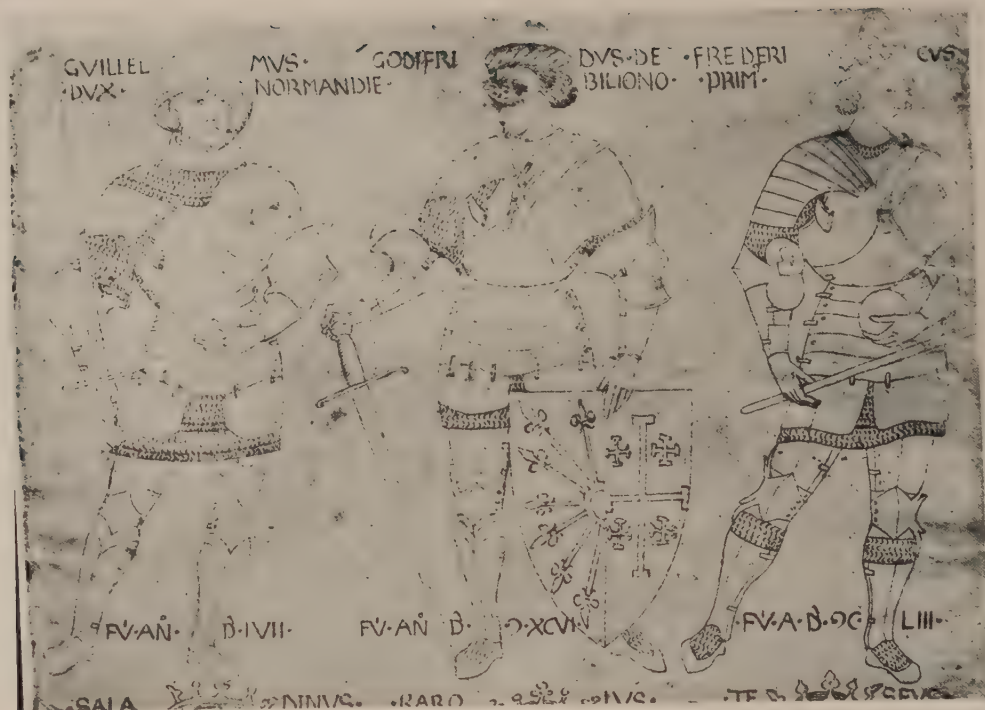


Fig. 3. Milanese armour, c. 1420-40, in the Castle of Churburg

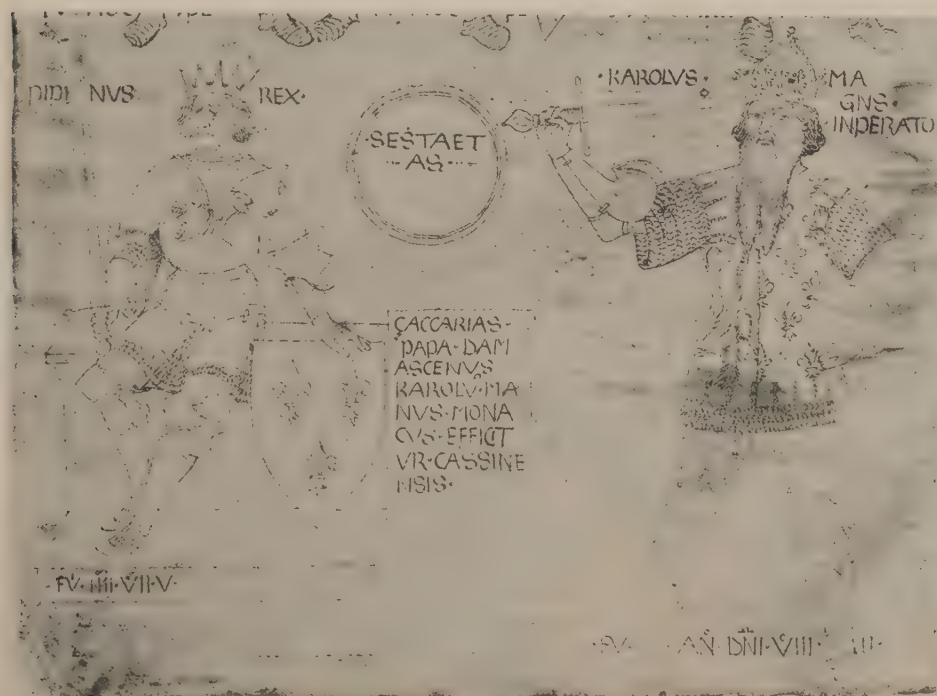
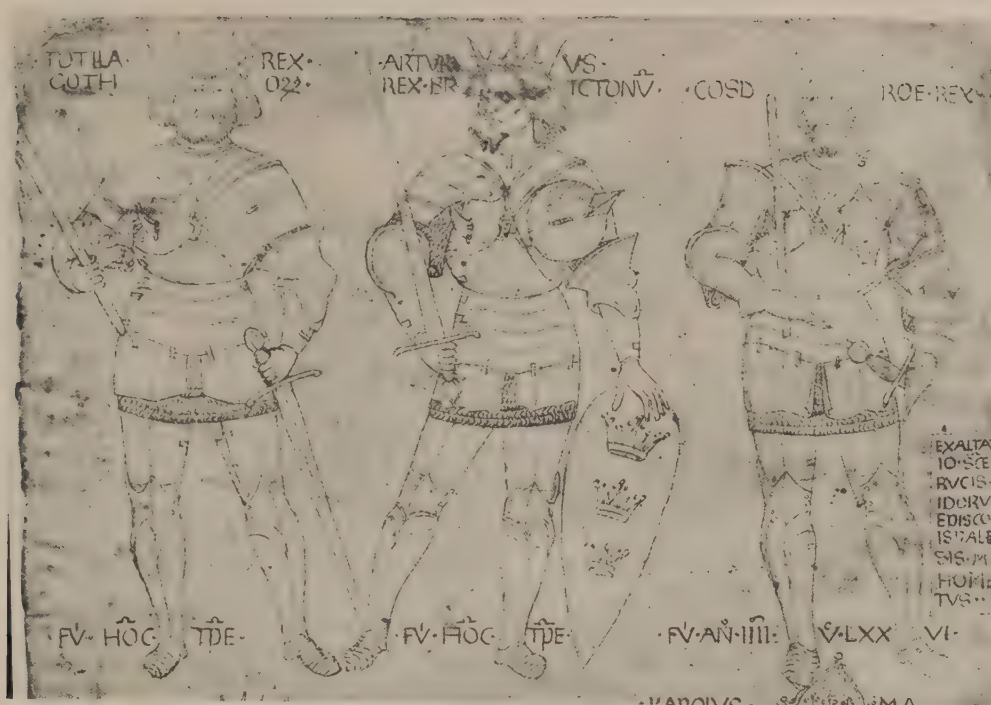


Giraudon

Fig. 4. Drawing by Jacopo Bellini in the Louvre, showing *lisière d'arrêt* on the breastplate



Drawings by a Paduan artist of the second quarter of the XVth century in the Camera delle Stampe at Rome, representing William the Conqueror, Godfrey de Bouillon, Frederick Barbarossa, Saladin, Charles of Anjou, and Theseus



Drawings by a Paduan artist of the second quarter of the XVth century in the Camera delle Stampe at Rome, representing Totila, King Arthur, Chosroes, Pipin, and Charlemagne



Fig. 1. Tamerlane. The latest in point of date in the Paduan sketch-book



Fig. 2. Milanese Gothic armour, c. 1430-50, from the Dino collection, in the Metropolitan Museum, New York



Fig. 3. Armour of the Count Palatine Frederick the Victorious (b. 1425-†1475), at Vienna, ascribed to Tommaso Missaglia



Fig. 4. Milanese Gothic armour, c. 1450, in the Historical Museum at Berne. Workshop of the Missaglia

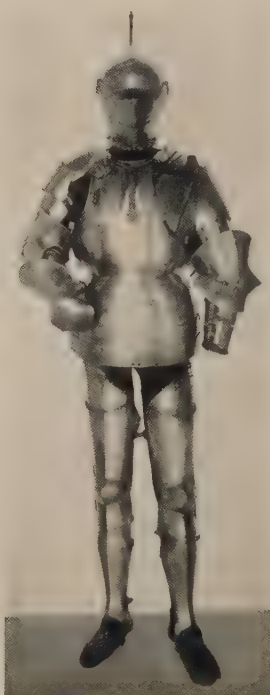


Fig. 5. Milanese Gothic armour, c. 1450, in the Castle of Churburg. Workshop of the Missaglia



Fig. 6. Milanese armour of Ferdinand, King of Aragon (b. 1453-†1516), at Vienna

internal evidence the sketch-book must date about 1425-40. All these drawings repay careful scrutiny and reveal much variety of detail. It is interesting to note side by side with the faithful representation of contemporary harness quite creditable renderings of Roman armour of classical times (e.g. on Theseus). The form of the elbow guards and other features remind one immediately of the Dino armour (pl. xxvi, fig. 2) in the Metropolitan Museum. The deep skirt of lames of this suit is another early feature, and I see no reason why one should not date this suit as early as 1430-40. Its purely Italian appearance is to-day rather altered by the German type of sallet and bevor which are associated with it, and by the pointed laminated sabatons which were added by M. Spitzer. Its appearance would be improved by the substitution of an armet or a 'Venetian' sallet.

If one puts this armour as early as 1430-50, one cannot place the Vienna armour of Friedrich der Siegreiche (pl. xxvi, fig. 3) much later, as it has the light symmetrical laminated defences of the shoulders and elbows, which were later usually overlaid by the large and unsymmetrical double pieces. The skirt is still deep and the tassets are stumpy.

It is closely followed by the Berne armour (pl. xxvi, fig. 4). One is inclined to place this a little later as the tassets are longer and gracefully crested in curved lines, a feature which appears on the bronze effigy of Richard Beauchamp, earl of Warwick, in St. Mary's, Warwick, which was completed in 1454. It is interesting to note how closely English brasses follow the developments of the Italian armourers during this period. I have already mentioned, on p. 124, the series of brasses about 1440, and one may note here that the Dyxton (fig. 5) and Delamare brasses still show simple symmetrical elbows, while the other immediately following it in date show the reinforcement of the left elbow. Uccello's battle-piece in the National Gallery is now believed to represent the skirmish at San Romano of 1432, when the Florentines defeated the Siennese. The presence of Nicolo da Tolentino's banner embroidered with the knot of Solomon invalidates the old title of the battle of San Egidio of 1415,¹ and internal evidence goes to show that the series of three battle-pieces, of which it forms one, were painted in the late 'thirties or 'forties. The Baron de Cosson put its date at 1446. Andrea del Castagno's fresco of Nicolo da Tolentino in the Duomo at Florence still shows small symmetrical elbows. A fine pair of these, with Missaglia marks and *lisières d'arrêts* at the end of the vambrace to protect the joint of the elbow, as on the Churburg armours, nos. 20 and 21, appeared in the Zouche sale of 1920, lot 83, and was lately in the possession of Sir Henry Farnham Burke (pl. xxviii, fig. 2). The tomb of Sir John St. Loe (fig. 16), †1440, at Chew Magna in Somerset, shows the same device of *lisières d'arrêt*

¹ H. P. Horne, in the *Monthly Review*, Oct. 1901, p. 114.

on the under-side of the vambraces. The wings with a simple cresting following round inside the border are very Italian in style.

The charming reverses of Pisanello's medals, several of which are illustrated by Laking (*ibid.*, vol. ii, figs. 425, 426, and 427), show the unsymmetrical appearance of the armour of the 'forties obtained by the addition of double pieces to the left side. His picture in the National Gallery of St. Anthony and St. George (*ibid.*, vol. i, fig. 222) also dates from this time. Modern scholarship places it at the end of his Ferrarese period (1447-8), and not at 1438 as stated by Laking.

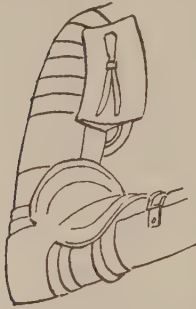


Fig. 16. Detail of the effigy of J. St. Loe, †1440.

To this period belong the three Churburg armours, nos. 19, 20, 21 (pl. xxvi, fig. 5), and to these can be added portions of at least three of the Grazie figures (nos. 5, 9, and 35). The heavy cusped placate or paunce with deep skirt of lames, the right elbow reinforced with a double thickness on the inside of the tendon protector, both point to a date in the middle of the century.

From the middle of the century onwards there is no lack of pictorial evidence. Laking has made a good selection from the numerous pictures and drawings of the Italian masters, which faithfully represent the form and construction of Milanese armours of the second half of the century (*Record*, i, figs. 224-37). The only difficulty is that the armour represented seems to vary so little over what is a considerable period of time. If one compares the armour sculptured on the triumphal arch of Alfonso V at Naples, executed before 1458 (pl. xxvii, fig. 2), and the monument of Antonio Rido, †1457 (pl. xxvii, fig. 1), with the pictures of Joos van Cleef (c. 1485-1540) at Vienna (pl. xxix, fig. 1), one notices very little change. Mantegna's well-known St. George (Laking, *ibid.*, fig. 201) was painted in 1492, but shows an armour very similar to Richard Beauchamp's of 1454. Perugino's St. Michael in the National Gallery (*ibid.*, fig. 218) was executed in 1496, and Zaganelli's picture (*ibid.*, fig. 224) as late as 1505. Luca Signorelli's and Sodoma's frescoes at Monte Oliveto (executed between 1498-1502), one of which depicts Totila mounting his horse after setting fire to the monastery of Monte Cassino (pl. xxviii, fig. 1), show armour little if at all different from that of the previous generation. From this one must conclude one of two things. Either, that the Milanese armourers, having brought their craft to its highest point of achievement, allowed it to remain for fifty years more or less static. This is not unlikely, as observation of the evolution of armour reveals that its progress is irregular, moving more quickly at some dates than at others, as is exemplified by the standardized appearance of English military brasses and effigies of 1360-1410, which succeeded a period of rapid change between 1320-60. Or alternatively,

that the artists paid little attention to fashion and made use of out-of-date armour for their models. This may be true in one or two cases, and Mantegna was frankly an antiquary, but it is not generally borne out by the armours themselves, or supported by other evidence which can be accepted as accurate representations of the armour of the date when they were produced. A marquetry panel in the closet of Federigo da Montefeltro, duke of Urbino, one of a series executed by Baccio Pontelli from designs by Francesco di Giorgio Martini from 1477 onwards, shows his armour in some detail (pl. xxx, fig. 2). But it is not noticeably different from that of twenty years earlier as depicted on the tomb of the Papal condottiere Antonio Rido, †1457, in the church of Santa Francesca Romana at Rome, and on the reliefs on the arch of Alfonso of Aragon at Naples, executed before 1458 (pl. xxvii, fig. 2). There is his armet complete with its wrapper and mail collar; his breastplate with cusped placate, skirt, and pointed tassets; the right arm with pointed cop with its wing to protect the tendon; mitten gauntlets lined with fingered gloves; the left cuisse with *lisière d'arrêt* and mail fringe below the knee. One pauldron lies on the right, and his baton and spur on the left. In the foreground is his left greave with its mail sabaton, and the other spur. One would not imagine that this distinguished professional soldier would allow a representation of obsolete forms on a panel which would be constantly before his eyes. The other panels show his books, his instruments of music, and other articles denoting his various activities and interests. The same can be said of the St. George in the very interesting van der Goes at Holyrood dating from 1476 (Laking, fig. 235).

We think, however, that it is possible to detect certain minor developments which mark the last quarter of the century. As noticed above, the armours on the statues nos. 7 and 14 at Grazie, show breastplates in one piece without placates and with gussets at the armpits. Although both forms seem to have run concurrently, this can be counted the later of the two, as it is carried on by armours of the early years of the sixteenth century, such as that of Giovanni Fregoso of 1505, no. 11 (pl. xxix, fig. 3), which has square-toed sabatons. Breastplates of this type are not uncommon. They are usually high in the neck with strongly boxed turn-overs at neck and armpits, and sometimes a pronounced ridge down the centre. Examples appear in several Italian pictures of the turn of the century, notably in Ercole Grande's (1465?–1535) altar-piece in the National Gallery of the Madonna and Child enthroned between St. John the Baptist and St. William (pl. xxxi, fig. 1); Giorgione's (1477–1510) study of San Liberale, sometimes called Gaston de Foix, in the same gallery (in the Castelfranco picture the breast has a placate); Pinturicchio's fresco of Alberto Aringhieri kneeling in prayer in the north transept of the cathedral at Siena (Laking, vol. ii, fig. 397, dates it about 1470, but it is known to have been painted between

1501 and 1504); and the picture in the Louvre attributed to Bianchi Ferrari (1460-1510) of the Madonna and Child with St. Sebastian and St. Quentin (pl. xxxi, fig. 3). In this last instance St. Quentin's armour is bordered with bands of gilt etching and his tassets are composed of several lames, so that we have here approached very close to the group of armours which I called 'Franco-Italian' of the early years of the sixteenth century.¹ Another example is the tomb of the French captain, Ansedun Giraud, erected in the church of the SS. Apostoli at Rome by his brother in 1505 (pl. xxxi, fig. 3). Finally as a tail-piece to the long reign of Italian Gothic armour comes the St. George in Lorenzo Luzzo's picture of the Madonna with Saints, dated 1511, which is the property of the Kaiser Friedrich Museum, but was at one time exhibited at Bonn (Crowe and Cavalcaselle, *History of Painting in Northern Italy*, 1912, III, p. 114).

Towards the end of the century the Italian armourers seem to have been influenced by the contemporary German fondness for fluted surfaces and riplings. Authentic Italian examples are not hard to find. The Churburg breastplate no. 36 bears a Milanese mark and is crested. The back-plate with triple Milanese marks of the initials BE or BB, similar to marks 13 and 26 in the Churburg Catalogue, is similarly embossed (pl. xxix, fig. 4), and the fresco of the Massacre of the Innocents by Matteo di Giovanni (pl. xxix, fig. 5), dated 1482, shows an Italian harness with a pleated back very similar to an actual example with a triple Milanese mark in the collection of M. Pauilhac at Paris.

Our increased knowledge of Italian armour of the first half of the century makes it possible to review the controversy which has in recent years centred round the Beauchamp effigy. The Baron de Cosson was the first to recognize the Italian features of the armour, which is a most faithful reproduction of a suit of Missaglia make like that at Bern (pl. xxvi, fig. 4). He suggested that as the earl had visited Italy in his earlier years in 1408, it might well have been modelled on an armour which he had acquired on that occasion. Viscount Dillon and the late Sir William St. John Hope questioned this in their edition of the *Pageant of the Birth, Life and Death of Richard Beauchamp, Earl of Warwick*, published in 1914, and while admitting the Italian forms, maintained that the style of armour was too advanced for the date of the earl's lifetime, and that it belonged to the date of the execution of the tomb (1450-4). Sir Guy Laking in chapter vi of his *Record* upheld the Baron de Cosson's view, and supported it by reference to Masolino's fresco in the church of San Clemente at Rome (*Record*, fig. 200), which was painted between 1420 and 1425, and also by the fact that in the contract between the earl's executors and the craftsmen it was agreed that the effigy should be made 'according to patterns'. He suggested that the patterns supplied might well be an armour that had belonged to the late earl. In my view the Masolino

¹ *Archaeologia*, vol. lxxix, p. 229.



Anderson

Fig. 1. Tomb of Antonio Rido, †1457, Castellan of S. Angelo for Pope Eugenius IV. In the church of Santa Francesca Romana at Rome



Alinari

Fig. 2. One of the reliefs on the Triumphal Arch of Alfonso V of Aragon in the Castel Nuovo at Naples, executed between 1455 and 1458 and ascribed by Venturi to Francesco Laurana



Anderson

Fig. 1. Totila mounting his horse. From the series of frescoes illustrating the life of St. Benedict begun by Luca Signorelli in 1497 and finished by Giovanni Antonio Bazzi, called Sodoma, in 1506, in the cloisters of the monastery of Monte Oliveto near Siena



Fig. 2. Pair of arms, Milanese, middle of the XVth century (one restored), bearing the mark of a crowned A. Formerly in the Zouche collection and subsequently in that of Sir Henry Farnham Burke



Fig. 3. Armour from the church of San Niccolò at Tolentino. Formerly in the Raoul Richards collection, Rome. The legs with mail fringes are of the XVth century



Fig. 1. Donor and St. George. Wing of a triptych by Joos van Cleef the Elder (†1540) in the Kunsthistorisches Museum, Vienna



Fig. 2. Incomplete armour, Milanese, c. 1500. Kunsthistorisches Museum, Vienna

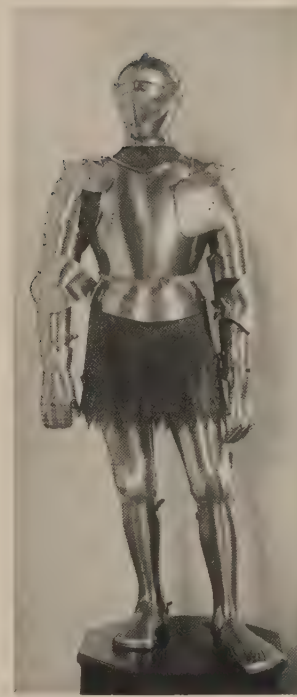


Fig. 3. Milanese armour of the Doge of Genoa, Giovanni Fregoso, 1505, in the Kunsthistorisches Museum, Vienna



Fig. 4. Back-plate with Milanese marks in the Swiss National Museum at Zurich



Fig. 5. Detail of the Massacre of the Innocents by Matteo di Giovanni, 1482; in the church of Sant' Agostino at Siena

Lombardi

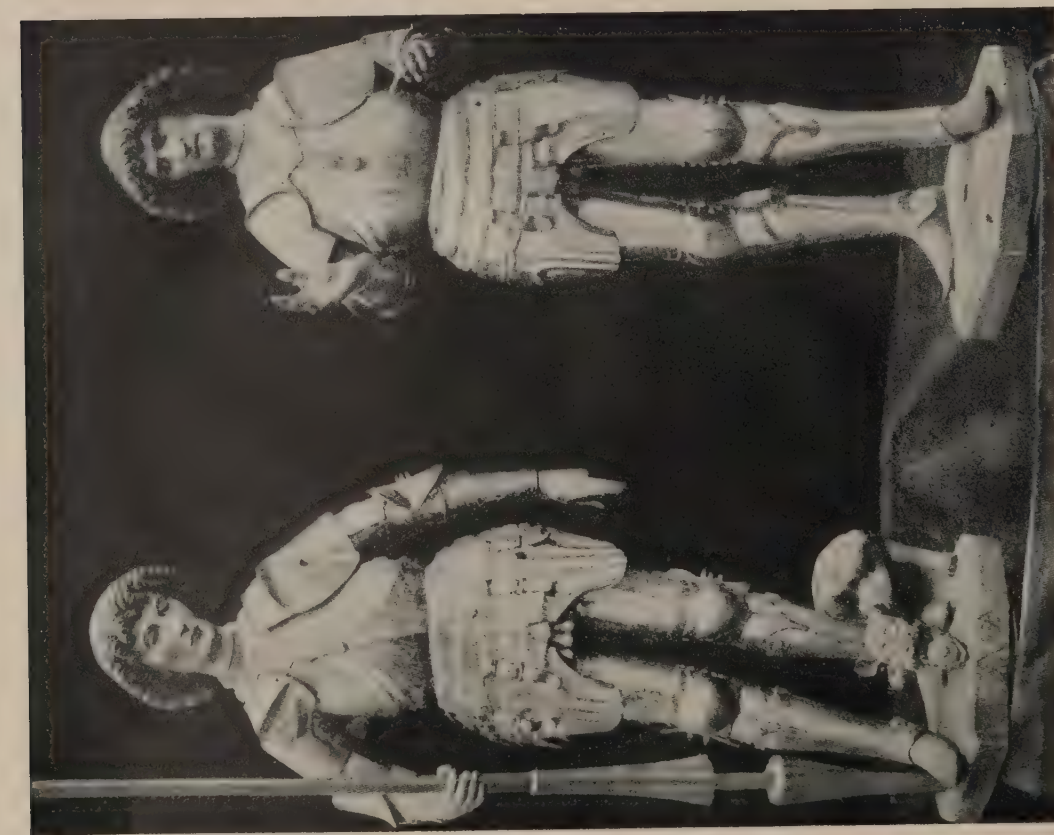


Fig 1. Wooden figures of St. George and St. Florian executed by the Tyrolean artist Hans Mültscher between 1456-8, in the church of the Holy Ghost at Vipiteno (Sterzing)



Fig. 2. Intarsia panel in the study of Federico da Montefeltro, Duke of Urbino, in the Castle of Urbino, showing his armour. Designed by Francesco di Giorgio Martini and executed by Baccio Pontelli about 1477

Published by the Society of Antiquaries of London, 1930

fresco carries little weight. The figures are seen from behind, and the details of their equipment are not sufficiently clear to permit of an adequate idea of the armour. But the Churburg armour, no. 18, backed by the examples quoted above, namely the tomb of Giovanni Cose, Gentile da Fabriano's St. George and the Bedford Missal, go to show that the armour of the Beauchamp effigy represents a more advanced style than that of the 'twenties. It approximates well enough to the group of English brasses of the 'forties, mentioned on p. 124 *supra*, and if we presume that the fashion was prevalent in Italy some time before it reached England (though this is by no means a safe assumption, as fashions even then sometimes travelled fast), it is still only possible to date the armour of the effigy as early as 1435-40. This would just allow it to have belonged to the earl, who died in 1439, and the 'pattern' might have been the last suit delivered to him by his Milanese armourers, with whom he had established relations in 1408. But the elongated pointed tassets are clearly an advance on the short or blunt type shown in the Paduan artist's drawings (pls. xxiv, xxv), the Churburg armours, nos. 19 and 21, the armour of Frederick the Victorious, and other instances of the 'thirties. They are more akin to Hans Multscher's charming little wooden figure of St. George in the church of the Holy Ghost at Sterzing,¹ which, as Lord Dillon has pointed out, was carved in 1458 (pl. xxx, fig. 1). I feel, therefore, that while the Baron de Cosson's and Sir Guy Laking's theory is possible, Viscount Dillon's is more probable. The historic sense was not so strong in the fifteenth century as it is to-day, and it appears that the earl's executors, when supplying the 'pattern', chose, not one of the earl's suits which were already becoming *demodées*, but the latest thing from Milan such as would have rejoiced him had he still lived.

In its day the armour that it produced made the name of Milan famous throughout Europe. Not only did it supply the rest of Italy (most of the so-called 'Venetian' sallets bear Milanese marks), but it exported armour in large quantities and sometimes even adapted its style to suit foreign tastes. The extent of its prestige is shown outside Italy in the pictures of van der Goes, Memling, and Joos van Cleef in Flanders; on the Beauchamp effigy at Warwick and numerous brasses in England; in the Italian suits made by the Missaglia for the German market, such as those of the Count Palatine of the Rhine;² and for the Spanish market in the suit of King Ferdinand of Aragon

¹ Sterzing is now within the Italian frontier and has been renamed Vipiteno. Its geographical position easily explains the 'Italian influences' which Mr. Foulkes correctly discerned when discussing it in *The Armourer and his Craft*, 1912, p. 14, but where it is stated to be at Augsburg. It is in fact a truthful portrait of the Milanese armours, such as were worn in Tyrol at this date and are still preserved in the Castle of Churburg, which is not so very many miles from Sterzing.

² Most Italian armours of the fifteenth century were fitted with large heavy pauldrons, and it is conceivable that the light, laminated rerebraces with besagues on the Count Palatine's suit were,

(pl. xxvi, fig. 6), and a Catalan picture of St. George in the possession of Señora Miguel y Badia recently exhibited at the Barcelona Exhibition (no. 1758). Mr. ffoulkes has shown that it was worn as far east as the Levant by the Venetian garrisons of Chalcis and by the knights of Rhodes. As early as 1237 Matthew Paris stated that Milan and her dependencies could turn out 6,000 men on iron-clad horses (Bohn's edition, i, p. 95). After the battle of Macclodio, 1427, the Venetian general Carmagnola sent back the Milanese prisoners stripped of their arms, but Filippo Maria was able to refit them in a few days, and two Milanese armourers alone (*due soli artificci di Milano*) were able to supply the duke with armour for 4,000 cavalry and 2,000 infantry (Gelli and Moretti, p. 4, quoting Verri). Its only rivals were the cities of Southern Germany and Tyrol (Nürnberg, Augsburg and Innsbruck), whose industry expanded rapidly during the fifteenth century, and in the sixteenth century must have surpassed the output of Milan, if one may judge by the great preponderance of German armour of the sixteenth century in museums and collections to-day. One might safely say that in the fifteenth century the name of Antonio Missaglia was more widely known and respected than that of Fra Angelico or Botticelli.

To-day there is no homogeneous suit of it in this country, though there are some fine armets and other pieces in the Tower, in the Royal Scottish Museum, and in the Wallace Collection. Sir Edward Barry possesses two composite suits at Ockwells Manor. There are no complete, homogeneous suits of this kind in the national collections of Paris, Madrid, Berlin, Dresden, Munich, Stockholm, and Leningrad. Until recently Italy, so rich in other branches of her art, was believed to be very poor in specimens of the craft that has made the name of Milan famous. The Gothic armours from the Dean Collection in New York and those in the Museo Stibbert are composite, and the educational value of composite armours is steadily declining as our knowledge and discernment improve. There is only one Italian Gothic armour, and that only the upper half, in the Royal Armoury at Turin, and it is only since the war that Italy has included the armoury at Churburg within her frontier.

The church of the Madonna delle Grazie with its contents was declared a *Monumento nazionale* by the Italian Government during the war, when a hasty survey of the district was carried out in the fear of an Austrian advance into the plains. The decision was made on general grounds, and the armour on like the long-toed sabatons, a concession to German taste. They appear, however, on Giorgione's *San Liberale* at Castelfranco, and the study for it in the National Gallery. A letter from the governor of the castle at Milan to the Duke, 14 Oct. 1473, reports that a German from Basle has bought '*molto quantitate de arme facte a la todescha*', Motta, *Archivio Storico Lombardo*, 1914, p. 216. In 1436 Tomaso Missaglia appointed Gasparo de Zugnio his agent in Spain, and considerable correspondence exists between the King of France and the Duke of Milan concerning the purchasing of armour and the employment of Milanese armourers, *op. cit.*



Fig. 1. Detail of St. William in the picture of the Virgin and Child by Ercole Grandi (1465-1535?) in the National Gallery



Fig. 2. Detail of St. George from the picture of the B.V.M. and Saints at Bologna by Lorenzo Costa, 1492



Fig. 3. Detail of St. Quentin in the picture of the Virgin and Child with Saints by Bianchi Ferrari (1460-1510) in the Louvre



Fig. 4. Tomb of the French captain, Ansedun Giraud, †1505, soldier of Charles VIII and Louis XII, who married a niece of Pope Julius II. Erected by his brother, the Archbishop of Embrun, in the church of the SS. Apostoli, Rome



Fig. 1. The Emperor Charles V. One of the figures on the second row in the church of Santa Maria delle Grazie



Fig. 2. The holy picture of The Virgin and Child in the chapel of the B.V.M. in the church of Santa Maria delle Grazie



Fig. 3. Pope Pius II. One of the figures on the second row in the church of Santa Maria delle Grazie

the statues passed unnoticed. But the effect of this declaration was that, without knowing it, Italy has made a noticeable addition to her national artistic wealth which must always remain in the country.

In conclusion, I may add that apart from the statues the church has other points of interest. The chapel of the Virgin contains a sacred picture which is held in great reverence, and is to-day surrounded with many silver hearts and other thank-offerings. It is a half-length of the Madonna and Child, and like many of its kind is traditionally ascribed to St. Luke; but a photograph (pl. xxxii, fig. 3) shows that it is more probably of the Veronese or Venetian school of the end of the fifteenth century, and that it has been much repainted. One of the side-chapels contains the tomb of Baldassare Castiglione, the author of *Il Cortegiano* and the friend of Raphael and patron of Giulio Romano; he was ambassador from Charles V to Henry VIII; the tomb is said to have been designed by Giulio Romano, and the inscription written by Pietro Bembo. There is also the tomb of his brother Camillo Castiglione, who fought under the Gonzagas in the Italian wars, and in Flanders and Germany. There are other renaissance tombs of Girolamo Stanga and Bernardo Corradi by Gian Cristoforo Romano, 1498. The altar at the east end was commissioned by Duke Ferrante Gonzaga and designed by Giulio Romano. The picture of the Assumption of the Virgin is by the brothers Costa of Mantua, and contains portraits of the duke and his duchess. It was restored in the last century. The side-chapels have been decorated at various dates by different families, and as so often happens in Italian churches this process has largely transformed the original appearance of the interior of the church. One contains a good altar-piece ascribed to Francesco Buonsignori.

As a relic of the time when churches were museums, in which were preserved anything from a unicorn's horn to the finest goldsmiths' work, there is a stuffed crocodile still hanging in the nave of the church of S. Maria delle Grazie. Donesmondi relates the surprising story that about a hundred years before his time this animal infested the marshes of the Curtatone, the district in which Grazie is situated. One day two brothers going out for a walk by the bank of the river accidentally encountered it. It promptly killed one, and the other, finding flight out of the question, took heart of grace, commended himself to the Virgin (these are a translation of his actual words), and, attacking the monster with a hatchet, killed it. He subsequently stuffed the skin with straw, and presented the body to the Sanctuary in grateful memory of his escape. The truthful Donesmondi goes on to say that there are some who declare this story to be false, and that crocodiles are not to be found away from the Nile. But he replies that Almighty God is well able to plant crocodiles in any part of the world He wishes, when He so desires to chastise humanity, and that

140 THE SANCTUARY OF THE MADONNA DELLE GRAZIE

there are other instances of God having introduced outlandish reptiles for this purpose.

There is another crocodile preserved in the Cathedral of Seville,¹ where it hangs inside the north-east door, which is named after it the *Puerta del Lagarto*.

Mr. Rushforth has drawn my attention to a third crocodile preserved in the church of St. Bertrand de Comminges, near Toulouse. He has suggested that the small size of these crocodiles implies that they do not come from Egypt, but from Palestine, where they are or were to be found in the rivers running into the Mediterranean. In that case it seems more probable that their presence in European churches can be accounted for by their having been presented by pilgrims returned from the Holy Land.

I have to thank Signor Premi of Mantua for the trouble which he took in arranging to have a scaffold erected and for photographing the seventeen armoured figures in the Church.

APPENDIX

The following list of Milanese armourers of the fifteenth and early part of the sixteenth centuries is based on Dr. Emilio Motta's researches among the documents preserved in the Archivio Civico, Archivio Notarile, and Archivio di Stato of Milan, which he published in *Archivio Storico Lombardo*, 1914, pp. 187-232, under the title *Armaioli Milanesi nel periodo Visconteo-Sforzesco*. As this important contribution has escaped general attention, the list of names is reproduced here, together with the dates of the documents in which they are mentioned.

Many of these armourers must be the owners of the marks incorporating various initials, which are found on so much armour of Milanese type and often vaguely classed as 'Missaglia'. Several documents in Motta's recension show that minor armourers sub-contracted with the Missaglias to work for them as specialists, and as Baron de Cosson has suggested, this may account for the presence of other marks stamped in conjunction with the well-known marks of the Missaglias as identified from the carved pillars of their house (e.g. the Churburg armours nos. 19 and 20). When further catalogues of the world's collections have been published with all the marks accurately reproduced, it may be possible to begin the task of fitting the names to the initials. At present all attempts to do so must be very tentative.

The texts of the documents quoted by Motta throw much light on the activities of the armourers of Milan and their relations with the Duke and foreign princes.

* = swordsmiths. † = lance-makers. ** = crossbow-makers. †† = bit and spur makers.

Abbate (l'), see <i>Antonio de l'abbate</i>	1547	Airoldi, Jacobino	1468/9	Antonio de l'abbate	1457
Acqua (Dell'), Ambrogio	1492	Albairate, Gio. Antonio d'	1492	Arconate, Anrigolo d'	1466
" " see <i>Dell'Acqua</i>		Ambroisiani, Giovanni degli	1492	" Donato d'	1406
		Angera, Cristoforo d'	1490	Armaroli, Antonio degli	1480
		Angera, Gio. Ambrogio d'	"	Assareto, Lorenzo	1461

¹ Illustrated by J. von Schlosser, *Kunst und Wunderkammer der Spätrenaissance*, fig. 6 b. That at Grazie can be seen in fig. 6 of the same book.

THE SANCTUARY OF THE MADONNA DELLE GRAZIA 141

*Baregio, Antonio da	1507	Corbetta, Pier Martire da	1488	Gorla, Ambrogio da	1507
Barini de, see <i>Negrolì</i>		Corio, Ambrogio	1469	Govenzate, Francesco da	d. before 1531
*Barzi Giovanni, da Desio	1395	" Anrico	1438	Grampi, Filippo de	1511
Belloni, Claudino	1458	" Bellino	1430-8	Grassi, Gabriele	1531
Bernardo <i>armoreo</i>	1425	" Cristoforo	1425-6	" Gio. Antonio	"
Bernareggio, Giov. Pietro	1495	" Donato	1438	" Gio. Pietro	"
Besana, Cristoforo	1531 or 1533	" Gabriolo	"	" Girolamo	"
" Francesco	1492	" Giovanni	"	Grossi, Giov. Ambrogio	"
Biagio <i>armaiuolo</i>	1483	Cormeno (de), see <i>Maveri</i>		Intra, Giov. Antonio da	d. before 1531
Biancardo, Aloisio	1531	Corneno, Giov. da	1425	Landriani, Antonio	1516
" Gio. Antonio	1533	Corneto, Ottolino da, di		Lecco, Domenico da	1418
Bichignola, Giacomo detto	1472	Milano	1465	*Legnano, Beltramolo da	1394
*Biffi, Antonio	1394	Correnti, Giovanni	1439	Leonardo <i>magistro</i>	1495
Binago, Ambrogio da	1466	" Simone	1371	Lissone, Bonaventura da	1531-3
Bizzozero, Gio. Pietro	1492	Costantino, Zoanne de	1495	Litta, Giov. Angelo	1511
Bolgioni, Lodovico	1533	Cremona, Sebastiano da	1489	Locate, Francesco da	1492
Bolitega, Francesco	1492	Croce (Della), see <i>Della</i>		Lodi, Antonio da	1426
Boltego, Aloisio da	1429, 1443	Croce		" Cristoforo da	1531
" Cristoforo da	1433	Cusano, Aloigi	1487-91	Lomello, Giovanni da	1426
Borellino, see <i>Boltego</i>		Daussonne, see <i>Ossona</i>		*Machariis, Anselmino de,	
*Bornengi, Antonio de,		Del Conte, Gaspare	1452	di Seregno	1394
de Rodello	1394	Dell'Acqua, Cristoforo	1481	Maffioli, Giovanni	1451
Bornengi Cristoforo de,		Della Croce, Antonio	1438	Maineri, Sebastiano	1452
de Rodello	"	Della Porta, Antonio	1488	††Mandello, Cristoforo da	1498
Borri, Angelino	1477	*Del Pozzo, Dionigi	1394	Manzoli, Gabriele de	1533
" Carlo	1531-3	Desio (da), see <i>Barzi</i>		Marliani, Matteo	1438
Borromeo, Venturino	1438	" <i>Ferrari</i>		Maveri, Maffeo de Cormeno	1443
Bossi, Giacomo	1487	Diviziis, Giovannino de	1438	Meda, Andrea da	1475
Bregnano, Gio. Antonio da	1505	Erba, Andriolo da	1432	†† " Giacomo Ambrogio	"
*Brusanavi, Marcolo, di		Facino, Pier Innocenzo	1458	da	"
Lecco	1395	Faerno, Giovanni da	1492	†† Meda, Giovanni da	"
*Busca, Antonio	1394	" Pier Innocenzo,		* " Marcolo da	1394
††Busto, Baldassare da	1498	see <i>Ferno</i>		Merate, Francesco da	1480-95
Calvi, Bernardo	1433	Fagnano, Maffino da	1426	" Gabriele da	1495
" Gio. Ambrogio	1533	" Petrolo da	1423-32	" Meraviglia, Giovanni	1391
Campagnoli, Scipione	1546	†Fenino, Battista da	1452	" Gio. Marco	1492
*Cani, Ardito de'	1394	Ferno, Pier Innocenzo		" Gio. Pietro	1531
Canova, Gabriele	1496	(Faerno)	1452-62	Milano, Antonio da	1460
Cantono, Giacomo da	1478-92	*Ferrari, Giov. de, da Desio	1394	" Pietro da	1436-89
" Gio. Ambrogio da	1533	*Ferriolo, Antonio	1459	" see <i>Corneto</i> (da),	
Capelli, Cristoforo	1480	Ferrando <i>magistro</i>	1495	Ottolino	
" Paolo	1419	Figino, Gio. Antonio	1531	Missaglia, Ambrogio	
Carnago, Bernardino	1480	" Michele	1492	d. before 1474	
" Gio. Pietro	1477	Foppa, Antonio	1452	" Antonio	1441-88
Caroles, see <i>Caronno</i>		" Bellono	1418	" Bernardino	1478-1507
Caronno, Ambrogio da	1485	Fossano, Cristoforo do	1491	" Catterina d. before	1474
Cassano Magnago, Giov.		" Pietro Antonio da	"	" Cristoforo	"
Maria da	died before 1531	Galizzi, Giov. Antonio de'		" Damiano	1472-4
Castello, Giov. da	1456-68	Gallarate, Giov. Angelo da	1531-3	" Dionigi	1429-43
Cattanei, Cattaneo	1472-91	**Gallazzi, Cristoforo	1450	" Donato	1490
" Francesco	1477-91	Garavaglia, Giovanni	1438	" Filippo	1474
Cavalleri, Ambrogio	1531-3	Gariboldo, Giovanni	1492	" Francesco d. before	
Cavezzali (or Caverzali),		Giacomo, detto Bichignola,		1468-74	
Gio. Maria	"	see <i>Bichignola</i>		" Gabrino ? d. before	
Cazzaniga, Donato da	1470	Giacomo, detto Zoppo	1436	1474-90	
Celario, Giovanni de	1406	Giovanni de Costantino,		" Gio. Angelo	1499-1504
*Colarete, Zambono de	1456	see <i>Costantino</i>		" Giov. Francesco	1490
Coliate, Battista da	1531-3				
Como, Giacomo da	1489				
Conte (Del), see <i>Del Conte</i>					

Missaglia, Gio. Pietro	1474	Negroni da Ello, see as <i>Mis-</i>	Samaliis, Cristoforo de	1492	
" Sebastiano	1499	<i>saglia</i>	San Donnino, Antonio	1419	
" Tommaso	1430-51	Novara, Antonio da	1461	Sedriano, Gabriele da	1492
" see <i>Bernardo ar-</i>				Serbelloni, Giov. Antonio	1470
<i>morero</i>		Oppreno, Ambrogio da	1531-3	*Seregno, Antonio da	1481-8
" see <i>Samaliis</i>		Ossona, Stefano d'	1485	" see Machariis (de)	
Molteno, Benedetto	1438			Seroni (Saronò), Antonio	
" Filippino	"	Pampuri, Giovanni	1477		1482-90
Mozzate, Francesco da	1531-3	Panigarola, Ambrogio	1468	" Bernardino	1531-9
Munti, Battista de	1533	**Perugia, Angelo da	1416	" Bernardo	1531-3
		Piatti, Battista	1531-3	" Cristoforo	1490
		" Biagio	"	†Servia, Onofrio da	1410
Nava, Luccolo da	1419	" Francesco	1492	Solari, Bernardo	1433
Negrolì, Aloigi	1504-33	" Tommaso	1531-3	" Cristoforo	1468
" Alessandro	1551	" Vincenzo	"	Spanzotti, Giovanni	1443
" Ambrogio, d. before		Pizo, Martino del	1482	Stucchi, Beltramo	1492
	1531	Porta (Della), see <i>Della Porta</i>		*Suganappi, Beltrame	1394
" Andrea	1505-31	*Pozzo (Del), see <i>Del Pozzo</i>			
" Battista	1533-51			Trezzo, Balzarino da	1455
" Bernardino	1513	Rabbia, Gerardo	1475	Trocazzano, Giacomino da	1438
" Domenico	1492	Ravagnasco, Maffiolo da	1492		
" d. before	1504	Ravizza, Jacomino	1425-33	Varedo, Battista	1531
" " (another)	1565	Rho. Gio., Ambrogio da		" Giov. Ambrogio	"
" Filippo	1531-51	" d. before	1531	Verderio, Galeazzo da	1492
" Francesco	1546-51	Riva, Ambrogio da	"	Vergiate, Giovanni da	1436
" Gerolamo	1505-47	*Rodello, Vercellino da	1394	Vigionus, Johannolus	1380
" Giacomo	1551	" see <i>Bornengi</i>		Vimercate, Albertino da	1419
" Gio. Ambrogio		Rotolo	1461	" Alberto da	1531
" d. before	1533			" Francesco da	1492
" Gio. Giacomo	1531	Salimbeni, Cristoforo		" Giov. Giacomo	
" Gio. Paolo	1531-65	" d. before	1531	da	1469-92
" Gio. Pietro	1531-65	" Giovanni	1480-92	" Nicolino da	1419
" Giuseppe	1533	" d. before	1533	Vitali, Jacomino	1466
" Nicolao	1531-65	Samaliis, Antonio de	1492	Viterbo, Francesco da	1450

VI.—*The Monastery of Cluny, 910–1155.* By Miss ROSE GRAHAM, M.A.,
D.Litt., F.S.A., and A. W. CLAPHAM, Esq., Secretary.

Read 13th March 1930

PART I. THE HISTORY OF THE CHURCHES AND BUILDINGS

By ROSE GRAHAM

In 1075 William de Warenne, who came from Normandy to England with William the Conqueror, set out with his wife Gundrada on a pilgrimage to Rome. Travellers from the north of France and England to Italy then usually took the Roman road, the Via Agrippa, which led from Boulogne, through Burgundy, by Avallon, Autun and Mâcon, to Lyons.¹ 'We went to many monasteries in France and Burgundy to offer our prayers,' wrote William de Warenne, 'and when we had come to Burgundy we learnt that we could not safely travel through it on account of the war between the pope and the emperor, so we turned aside to the monastery of Cluny, a great and holy abbey in honour of St. Peter, and there we adored and besought St. Peter.'²

The little town of Cluny is about fifteen miles NW. of Mâcon. It is charmingly situated on the river Grosne in a wide valley among the high limestone hills known as the Montagnes du Mâconnais et du Charolais, which are outliers of the northern chain of the Cevennes. The lower slopes of these wooded hills are covered with vineyards, and the fields and pastures of the valley are very fertile.

In the eleventh century the large precincts of the monastery were protected by walls which are described as the *castellum*.³ Within the precincts, on the north-west, was an orchard of fruit-trees and a vineyard and a large vegetable garden.⁴

William de Warenne and Gundrada were welcomed by the monk who was keeper of the great guest-house. In it was a lodging for men with forty beds and a lodging with thirty beds for countesses and honourable women and a common refectory.⁵ The horses were taken to the great stables in the

¹ J. H. Pignot, *Histoire de l'Ordre de Cluny*, i, 29–31 (Société Éduenne, 1868).

² *Recueil des Chartes de Cluny*, ed. A. Bernard et A. Bruel, iv, 689–96.

³ M. Herrgott, *Vetus Disciplina Monastica*, 273, no. xxxiii; *Consuetudines Monasticae*, ed. B. Albers, i, 178; Migne, *Patrologia Latina*, cxlix, 759.

⁴ *Consuetudines Monasticae*, i, 178; Migne, *Patrologia Latina*, cxlix, 683; *Bibliotheca Cluniacensis*, 1679.

⁵ *Consuetudines Monasticae*, i, 138.

outer court, and the monk in charge instructed his groom to feed them on barley and oats, and he supplied new horseshoes if they were needed.¹ The keeper of the guest-house took William and Gundrada into the church, where they knelt in prayer, first in the nave at the altar of the Cross, above which was the silver shrine of the Pope St. Marcellus (*ob.* 310),² and then in the choir at the high altar, above which was the great image of St. Peter set between golden shrines,³ and at the altar of St. Mary. While the monks were at mass they were shown the cloister and some of the buildings of the monastery. 'We found holiness and religion and great charity,' wrote William de Warenne, 'and we were honourably received by the good prior and all the holy convent.' Abbot Hugh was absent, but William and Gundrada were admitted into confraternity with Cluny at a solemn ceremony in the chapter-house.⁴ They had long desired to found a monastery, and after some delay they prevailed on Abbot Hugh to send three or four monks across the sea in 1077 to serve the stone church which they had built in the valley below Lewes Castle. Lewes was the first Cluniac priory which was founded in England.

The church and the monastic buildings which were visited by William de Warenne and Gundrada are worthy of study, and they are of some importance in the history of the building of the new *ecclesia major*, which was begun by Abbot Hugh in 1088, and his larger monastic offices, which superseded them. The monastery was founded in 910 by William, duke of Aquitaine, who gave his land at Cluny with the chapel of St. Mary and St. Peter, vineyards, fields, meadows, waters, and wastes to Berno, Abbot of Baume-les-Messieurs, in the Jura mountains. The duke's ideal was set forth in his charter: 'With a full heart and mind the monks shall build an exceeding pleasant place. We will also that in our time and those of our successors works of mercy shall be shewn daily to the poor and needy, to travellers and pilgrims, so far as the opportunity and ability of the place shall allow.'⁵

The first monks of Cluny had a struggle with poverty. Duke William died in 918; Abbot Berno died early in 927 and was buried at Cluny.⁶ The church was not ready for consecration until after the accession of Abbot Odo.⁷ In a charter of August 927 it is described for the first time as already consecrated

¹ Herrgott, *Vetus Disciplina Monastica*, 157, cap. xii.

² Herrgott, *op. cit.*, 258, cap. lxiv; Migne, *Patrologia Latina*, cxlix, 764; *Consuetudines Monasticae*, ed. B. Albers, i, 184.

³ Herrgott, *op. cit.*, 258, cap. lxiv; Migne, *Patrologia Latina*, cxlix, 764.

⁴ *Recueil des Chartes de Cluny*, ed. Bernard et Bruel, iv, 689, 690. Cf. W. G. Clark-Maxwell,

'Some Letters of Confraternity', *Archaeologia*, lxxv, 30; Herrgott, *op. cit.*, 200.

⁵ *Recueil des Chartes de Cluny*, i, 124.

⁶ *Bibliotheca Cluniacensis*, ed. Marrier et Duchesne, 1631.

⁷ *Bibliotheca Cluniacensis*, 32.

in honour of St. Peter and St. Paul.¹ When the monks invited the bishop of Mâcon to dedicate their house of prayer he arrived with a throng of priests and attendants, to the dismay of the monks, who were unprepared to offer so much hospitality. In the early morning, before it was light, the doorkeeper of the church was watching for the bishop, when a wild boar rushed out from the wood straight at the monastery; the keeper barred the door and the wild boar stood outside. When the bishop arrived he ordered his men-at-arms to kill him. 'And so,' added the monk, 'the words of the psalmist were fulfilled'—"In the days of famine they shall be satisfied."² Abbot Odo had no money to pay for the monastic buildings, and it was only through the generosity of friends in Aquitaine that the work was continued.³

The number of monks increased, and a new church, on a site perhaps south of the oratory of Abbot Berno, was begun,⁴ and it was finished during the rule of Abbot Majolus (944-94). Majolus, 'the prince of monks', was not only a saint and a scholar but a man of the world and a friend of popes and emperors.⁵ He took nine journeys to Italy and made long visits to Rome and Ravenna. He was in Rome in 967 and stayed several weeks in the monastery of St. Paolo Fuori, and in the same year the Emperor Otto I summoned him to Ravenna, where he reformed the monastery of St. Apollinare in Classe, a short distance from the city. The *ecclesia major* of Cluny, as it is always called in the Customs of the eleventh century, was an aisled⁶ basilica with an apse and a triumphal arch,⁷ and at the west end there was a great narthex with two towers.⁸ The church was dedicated in 981, on the feast of St. Valentine, by Hugh, Archbishop of Bourges.⁹ In a letter written by a monk of Cluny in 1121, it is stated that on the occasion of this dedication the archbishop of Bourges placed a small vessel containing the ashes of St. Peter and St. Paul in a column of the high altar. When in the third century Pope Cornelius took the bones of St. Peter and St. Paul from the Catacombs, the bones of St. Peter were taken to St. Peter's and those of St. Paul to the church of St. Paul outside the walls of Rome, St. Paolo Fuori, and the dust or ashes of both saints were placed in a reliquary at St. Paolo.¹⁰ The monks of St. Paolo came under the influence of Cluny; there were tumults in Rome in 966, and the monks of St. Paolo brought the precious relic safely to Cluny.

¹ *Recueil des Chartes de Cluny*, i, 264, 280.

² *Bibliotheca Cluniacensis*, 32.

³ *Ibid.*, 31.

⁴ *Post*, pp. 166-8.

⁵ L. Bourdon, 'Les voyages de S. Mayeul en Italie, Itinéraires et Chronologie', *Mélanges d'Archéologie et d'Histoire*, xliii, 61-88 (École Française de Rome, 1926).

⁶ Migne, *Patrologia Latina*, cxlix, 754; Herrgott, *Vetus Disciplina Monastica*, 311.

⁷ *Consuetudines Monasticae*, ed. B. Albers, i, 54, 72, 82.

⁸ *Ibid.*, i, 138.

⁹ Herrgott, *op. cit.*, 298; *Bibliotheca Cluniacensis*, 560, 1619, 1635.

¹⁰ Cf. G. Forrest Browne, *The Cultus of St. Peter and St. Paul*, 46-81.

If, as Mr. Clapham surmises, the new church of Abbot Majolus stood on a site south of the first small church of Abbot Berno, it became necessary to plan and build a new cloister and monastic offices. It is probable that, owing to lack of money, timber buildings were erected by Abbot Majolus, since it is known that the task of rebuilding them in stone fell to his successor, Abbot Odilo (994-1049). His contemporary biographer, the monk Jotsald, records that Odilo left untouched the walls of the church built by Majolus, but he renewed all the monastic buildings.¹ The latest work, the new cloister, was very handsome with its marble columns; they were quarried in the French Alps and transported with great labour down the rapid river Durance, which runs into the Rhône some miles south of Avignon, then up the swift Rhône to Lyons, where the slower Saône flows in, up the Saône to Mâcon, and thence by road to Cluny. When the cloister was finished Abbot Odilo proudly said: 'I found Cluny built of wood and I have left it of marble,' for he had in mind a saying of the Emperor Augustus, 'I found Rome built of brick and I have left it a city of marble'. The monk John who accompanied Peter Damiani, Cardinal Bishop of Ostia, to Cluny in 1063 wrote, in his praise of the monastery, that the beautiful cloister almost seemed to invite monks to dwell there. The refectory, which was large enough to seat all the monks, had paintings on the walls, but there was no superstition in the subjects chosen.² He noted that all the monastic buildings were of stone, and that there was an abundant water-supply, which was brought by pipes laid underground. Friends of Cluny sometimes promised five or ten shillings a year, and the chamberlain set aside these sums for the repair of the pipes which brought the water into the lavatory or washing-place in the cloister.³ It was kept clean by the servants of the almoner, and they cleared the water-course, which served as the great drain for sanitation, and made sluices to keep the water up to the right level in the summer.

The Customs of Cluny are the quarries from which it is possible to reconstruct the church and buildings of the monastery in the eleventh century. Books of Customs were written to supplement the rule of St. Benedict, and they contain many details concerning the services in the church and the daily life and government of the monastery. Three books of Customs of Cluny were compiled at intervals in the eleventh century.⁴ The first book was written during the rule of Abbot Odilo, at a date between 1030 and 1048. Until the present century these Customs were commonly attributed to the Italian monastery of Farfa, near Spoleto. A new edition by Dom Bruno Albers, O.S.B., was printed in 1900 from a manuscript in the Vatican, which supplied a large

¹ Migne, *Patrologia Latina*, cxlii, 908.

³ Herrgott, *op. cit.*, 145, 160.

⁴ R. Graham, *English Ecclesiastical Studies*, 4-7, 25-8.

² *Ibid.*, cxlv, 873-4.

section missing from the edition of 1726.¹ Dom Ursmer Berlière, O.S.B., and Dom Hildephonse Schuster, O.S.B., have proved conclusively that the so-called Customs of Farfa are the Customs of Cluny.² One invaluable chapter describes briefly the church and buildings of the monastery and gives some measurements of length, height, and breadth.³ Other chapters reveal picturesque details, but they are not always easy to understand and they omit much.

About the middle of the eleventh century a new book of the Customs was needed, and the whole work was undertaken by a monk named Bernard. In a charming preface he wrote that the older monks had passed away, and disputes frequently took place between their successors about the Customs; there was great diversity of opinion, and novices often went out from the chapter more uncertain than when they came in. His 'Customs of the Monastery of Cluny' is the fruit of patient observation of the daily life of the monks, in addition to a study of the written customs which he interpreted with the help of older and wiser brethren. He dedicated his work to Abbot Hugh 'as a stream returning to its source, for whatever I have learnt of the Order, whatever I have apprehended of the way of religion is more due to your gift than to my own labour'. The work was probably finished in 1067 or 1068, and it contains a most complete and detailed account of everyday life at Cluny. It was edited by Dom Marquard Herrgott and printed in 1726 in the *Vetus Disciplina Monastica*,⁴ now a very rare book, of which the British Museum has a copy. Bernard's book of Customs was revised and abbreviated about 1083 by another monk of Cluny, the German Ulric, at the request of his friend William, Abbot of the Benedictine Monastery of Hirsau in Würtemberg. Ulric's book of the Customs of Cluny is well known, for it has been reprinted from the *Spicilegium*, edited by Dom Luc d'Achery.⁵

The high altar of the *ecclesia major* was consecrated in honour of St. Peter and St. Paul. There were three chapels at the back of the sanctuary, the chapel of St. Mary and St. John in the middle, with the chapel of St. Paul on the north, and St. Peter on the south.⁶ The altar of St. John the Evangelist and St. James was in the south transept, the altar of St. Philip and St. James the Less in the north transept.⁷ These were called the five principal altars. The names of the saints in whose honour the altars were dedicated were

¹ *Consuetudines Monasticae*, i, 1-206; Herrgott, *op. cit.*, 39-132; Migne, *Patrologia Latina*, cl, 1194-1300.

² *Revue Bénédictine*, xvii, 164, 165; xxiv, 374-85; U. Berlière, *L'Ascèse bénédictine*, 30.

³ *Consuetudines Monasticae*, i, 137-9; reprinted by V. Mortet; cf. Appendix I, *post*, p. 176.

⁴ *Op. cit.*, pp. 134-364.

⁵ *Spicilegium*, ed. L. d'Achery, iv. 21-226 (1671); Migne, *Patrologia Latina*, cxlix, 634-778.

⁶ Herrgott, *op. cit.*, 229, 230.

⁷ Migne, *Patrologia Latina*, cxlix, 764.

inscribed in tablets on the walls,¹ sometimes in verse, as on the inscription behind the high altar:

Pastor Petre gregis, celestis Claviger aule,
Divine legis tu Doctor maxime Paule:
Hic quorum cineres, Domino prestante, reponi
Testantur veteres, nobis estote patroni.²

The altar of the Cross, at which lay folks might make their communion on Easter Sunday, was the principal altar in the nave.³ Other altars⁴ were dedicated in honour of St. John the Baptist, St. Bartholomew, St. Thomas, St. Stephen, St. Martin, St. Gregory, St. Augustine, St. Columban, St. Taurèn, St. Marcellus bishop of Chalon-sur-Saône and Martyr, St. Philibert, whose body had been brought after many wanderings to the Benedictine monastery of Tournus,⁵ and St. Agatha. Some of them were the lesser altars of the nave,⁶ others were in the chapels of the crypt.⁷ The altar of St. Benedict was in the very large sacristy which opened out of the north transept,⁸ and was probably, as Mr. Clapham surmises, the first church of the monastery. No special altar was assigned for the Morrow mass, or first mass of the day; sometimes it was said at the altar of the Cross in the nave, sometimes at the altar in the chapel of St. Mary, and on feast days in Lent at the high altar.⁹ It is not possible to discover from the Customs how far the ritual choir extended into the nave or the exact position of the dividing screens. The greater choir was separated from the lesser choir by a screen and a step; the novices took their places in the lesser choir, between the choir and the altar of the Cross in the nave; the boys sat with their masters in the greater choir.¹⁰

Under the instructions of Abbot Odilo a ciborium was set up over the high altar¹¹ in imitation of those which he had seen in the churches in Rome. Ciboria are known to have been erected as early as the fourth century, and the most sumptuous of them was given by the Emperor Constantine to the Lateran basilica.¹² One dating from the ninth century is now set over a side altar at St. Apollinare in Classe, near Ravenna. There are well-known medieval examples in Rome at St. Clemente and St. Maria in Cosmedin. The columns

¹ *Consuetudines Monasticae*, i, 183.

² *Bibliotheca Cluniacensis*, 561.

³ *Consuetudines Monasticae*, i, 57.

⁴ *Ibid.*, i, 12, 22, 26, 82, 127, 183.

⁵ Poupardin, *Monuments de l'histoire des abbayes de Saint Philibert*, pp. xxvii-xl ('Collection de textes pour servir à l'étude de l'histoire', vol. xxxviii, 1905).

⁶ Migne, *Patrologia Latina*, cxlix, 718.

⁷ *Consuetudines Monasticae*, i, 144, 147.

⁸ *Ibid.*, 164; Herrgott, *op. cit.*, 249; Migne, *Patrologia Latina*, cxlix, 757.

⁹ Herrgott, *op. cit.*, 248, 257.

¹⁰ Migne, *Patrologia Latina*, cxlix, 702, 743.

¹¹ *Rodulfi Glabri Historiarum Libri quinque*, ed. M. Prou, 110 ('Collection de textes pour servir à l'étude de l'histoire', vol. i, 1886).

¹² F. Cabrol, *Dictionnaire d'archéologie chrétienne et de liturgie*, vol. iii, pt. 2, 1581-1612.

of the ciborium at Cluny were ornamented with silver and niello—a compound of silver, lead, copper, and sulphur, used for decorating silver.¹ The precious metals of the ciborium were spoils taken from the Saracens, and were brought by Sancho, bishop of Pampeluna. It was a custom of the Saracens to ride to battle in trappings of gold and silver, and the Christian army which defeated them vowed the gold and silver spoils to Cluny.² The work was executed by goldsmiths and enamellers, who plied their crafts in a building set apart for their use within the monastery precincts near the novice house.³ A golden dove was suspended from the roof of the ciborium; inside the dove was a pyx or small receptacle in which the reserved sacrament was kept.⁴ The sacrist had the charge of the treasures and ornaments, the vestments, frontals, hangings, and curtains, which were kept in the very large sacristy, 58 feet long,⁵ in which also the hosts were prepared and baked. The sacrist and his assistants slept in the sacristy, probably in the tower, to guard the treasure, one of them actually inside the church.⁶ Sometimes in the eleventh century the most precious objects of the treasure, including the gold statue of St. Peter, were sent away for safety to the monks' castle of Lourdon, on a hill near Cluny.⁷

In the Customs written between 1030 and 1048 there are elaborate instructions for the celebration of the great festivals of the Church.⁸ On the vigil the sacrist superintended the monastery servants, the woodcutters, and the tailors, who fixed magnificent hangings on the walls and hung curtains at the altars. Hangings with figures of the saints woven in relief⁹ were suspended on the face of the triumphal arch. Gold phylacteries and portable altars were placed on a wide beam in front of the high altar.¹⁰ Phylacteries were small flat reliquaries of gold and silver, and many were probably made by the goldsmiths and enamellers in the monastery workshops. In the Customs written during the rule of Majolus, when there were fewer monks, the sacrist was instructed to give phylacteries to all the monks who walked in the Rogation Days procession outside the monastery.¹¹

¹ Migne, *Patrologia Latina*, cxlii, 908, 941, 942; O. M. Dalton, *Byzantine Art and Architecture*, 533.

² *Rodulfi Glabri Historiarum Libri quinque*, 110.

³ *Consuetudines Monasticae*, i, 139.

⁴ Herrgott, *op. cit.*, 226; Migne, *op. cit.*, cxlix, 653, cap. viii; Cabrol, *Dictionnaire d'archéologie chrétienne et de liturgie*, vol. iii, pt. 2, 2231.

⁵ Herrgott, *op. cit.*, 245; *post*, p. 167.

⁶ *Ibid.*, 247; Migne, *op. cit.*, cxlix, 653.

⁷ Herrgott, *op. cit.*, 336; Migne, *op. cit.*, cxlix, 675; L. Raffin, 'Le Château de Lourdon', *Millénaire de Cluny*, ii, 164-210.

⁸ *Consuetudines Monasticae*, i, e.g. 7, 54, 72.

⁹ *Ibid.* I am indebted to Abbot Cabrol, O.S.B., for the translation of these words; cf. V. Mortet, *Recueil de textes relatifs à l'histoire de l'architecture... en France au Moyen Âge*, Glossaire.

¹⁰ *Consuetudines Monasticae*, i, 10, 14, 70, 72, 98.

¹¹ *Ibid.*, ii, 23; cf. Migne, *Patrologia Latina*, cxlix, 670.

Phylacteries were common in England in the eleventh century.¹ Nine were counted in the treasure of the monastery of Ely in 1079,² and William the Conqueror gave Battle Abbey three hundred from the treasure of the Saxon kings, many with gold and silver chains.³ Four phylacteries, all of the same design, which are the work of Frère Hugo d'Oignies, c. 1226-30, are preserved in the treasure of the nuns of Namur, one in the Musée at Namur, and one in the Musées Royaux d'Art et d'Histoire in Brussels (pl. xxxiii, fig. 1).⁴ Two phylacteries are in the treasure of Conques, and a thirteenth-century example has been added to the gold statue of Ste. Foy.⁵ Portable altars were also beautiful specimens of goldsmiths' work. A slab of stone, often porphyry, was framed in wood, which was covered in plates of metal, often engraved or embossed, and often enriched with enamel, niello, and gems;⁶ beneath the stone was a place for relics of saints. At high mass on great festivals the gold chalices, which Abbot Odilo had made as a gift from the Emperor Henry II of Germany, gospel books with gold covers set with gems, and gold candlesticks were placed on the high altar.⁷ There were several hangings or frontals on the high altar. These were removed in turn, and after the reading of the gospel a gold frontal was revealed in all its splendour. The sides, which had perhaps been sacrificed in the famine of 1033, were repaired with the gold sent by Sancho, king of Castile.⁸ These gold altar frontals were sheaths of metal, and a magnificent example now in Paris at the Musée de Cluny is traditionally said to have been given to the cathedral of Bâle at the beginning of the eleventh century by the Emperor Henry II.⁹ He was probably not the donor of the golden altar of Cluny, for it is not mentioned with his other munificent gifts, the insignia imperialia. Abbot Odilo was present at Henry II's coronation in Rome in 1014, when the Pope Benedict VIII gave the emperor a golden orb. The emperor said: 'No one is so well fitted to receive this gift as those who have trodden the pomps of this world underfoot and follow the Cross without hindrance,' and so he sent his golden orb to Cluny with many other ornaments for the church.¹⁰ On the way home to Germany from Italy in 1015 the emperor went a long distance out of his way to visit Cluny in the company of Abbot Odilo

¹ D. Rock, *The Church of our Fathers*, ed. G. W. Hart and W. H. Frere, iii, 357.

² *Liber Eliensis*, ed. D. J. Stewart, 249 (Anglia Christiana Society).

³ *Chronicon de Bello*, ed. J. S. Brewer, 37 (Anglia Christiana Society).

⁴ *Bulletin des Musées Royaux d'Art et d'Histoire*, July 1930, pp. 93-6.

⁵ A. Darcel, *Trésor de l'Église de Conques*, 36-40, plate (1861).

⁶ *A Guide to the Mediaeval Antiquities*, *British Museum*, 232, 233, pl. xiii (1924).

⁷ *Consuetudines Monasticae*, i, 7, 10, 54, 72, 183.

⁸ *Ibid.*, 10, 33; Migne, *Patrologia Latina*, cxlii, 941.

⁹ R. de Lasteyrie, *L'Architecture religieuse en France à l'époque romane*, 686-8 (ed. 1929).

¹⁰ *Rodulfi Glabri Historiarum Libri quinque*, ed. M. Prou, 21, 22.



Photo, Musées Royaux

Fig. 1. A phylactery from the abbey of Oignies, Musées Royaux d'Art, Brussels



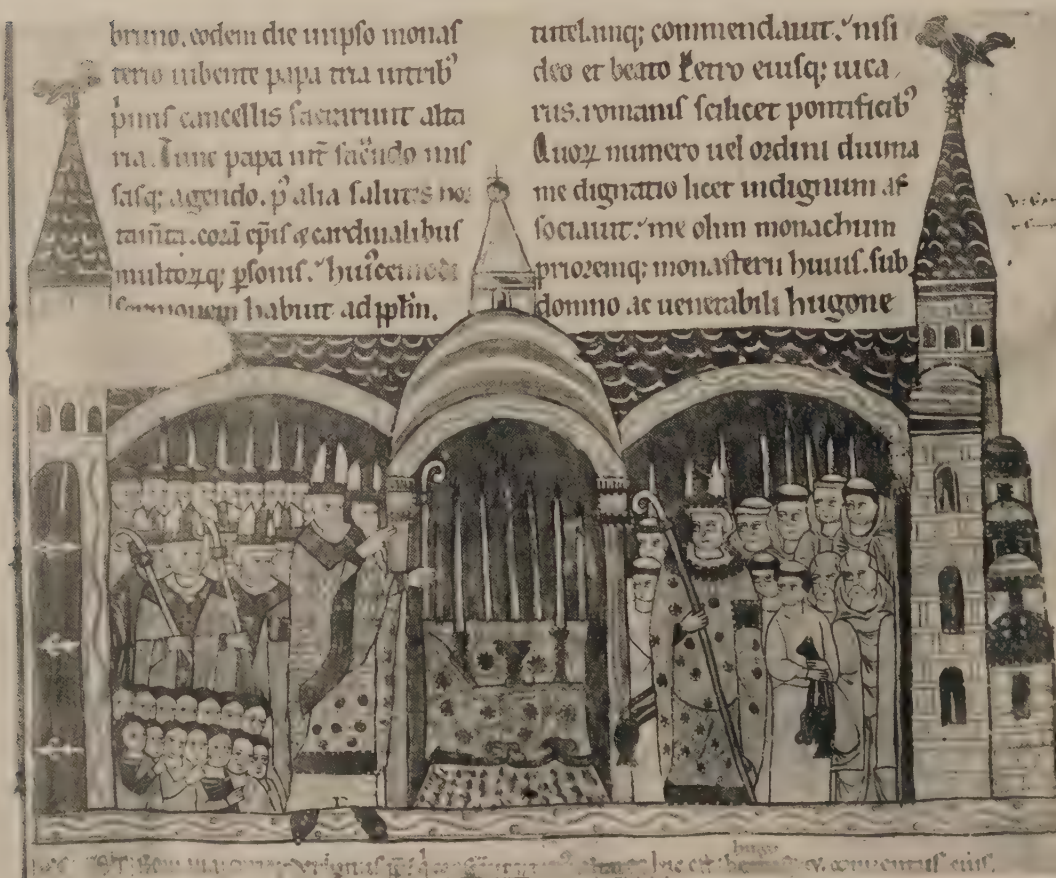
Photo, Bödeker, Hildesheim

Fig. 2. The Corona in the Cathedral Church of Hildesheim



Protat Frères, Mâcon

Fig. 1. North view of the Church of Cluny, September 22nd, 1617.
Drawn by the Jesuit Étienne Martellange



Louis Lecuyer, Paris

Fig. 2. The consecration of the high altar of Cluny by Pope Urban II.
MS. Fonds de Cluny 129, Bibliothèque Nationale

and Meinwerk, bishop of Paderborn. He was present at high mass on the feast of St. Peter-in-Cathedra (22 February), when he offered his golden crown at the altar.¹ The golden orb and crown and sceptres were among the most precious treasures of the monastery, and they were carried in procession on great festivals.² There was a terrible famine in 1033, a year of incessant rain, when the crops failed. Travellers and children were decoyed, killed, and eaten within a few miles of Cluny.³ Abbot Odilo was filled with compassion for the sufferings of the poor, and in the judgement of some of the monks he was too prodigal in almsgiving, for he sold the emperor's precious orb and crown.⁴

It was the duty of the sacrist to bring out special treasures at festivals and anniversaries.⁵ On Ascension Day four *tabule* glowing with images of saints were put on the altar.⁶ These were possibly either small portable mosaics or silver-gilt plaques of Byzantine embossed work like the beautiful eleventh-century plaque of the Virgin and Child in the Victoria and Albert Museum.⁷ A *tabula* representing the Virgin and Child was taken from the altar of the church of St. Mary adjoining the infirmary and carried in the procession on feasts of the Virgin.⁸ The monk John, who stayed eight days at Cluny with Peter Damiani in 1063, marvelled at the costly treasures and the relics of the saints and the vaulted church with its many altars.⁹

The gold chalices, thuribles, candlesticks, and other magnificent ornaments had a special significance. The venerable Bede (*ob.* 735), the sagacious Englishman, as he is called in the twelfth-century catalogue of the library at Cluny,¹⁰ wrote two commentaries, one on the Tabernacle of Moses, its vessels, and the vestments of the priests, another on the Temple of Solomon,¹¹ in which all the vessels were of pure gold; both were in the library of Cluny, and a monk named Gerard was studying Bede on the Temple of Solomon in 1042 and 1043.¹² The author of the Customs of Cluny (1030-48) was saturated in the language of the Vulgate; sometimes he used the word *templum*, sometimes *basilica*. The book of Exodus was read in church in the week beginning on

¹ Mabillon, *Annales Ordinis S. Benedicti*, iv, 241.

² *Consuetudines Monasticae*, i, 11, 44, 71, 75.

³ *Rodulfi Glabri Historiarum Libri quinque*, ed. M. Prou, 99-103.

⁴ Jaret, *Vie de S. Odilon*, 607.

⁵ Herrgott, *op. cit.*, 246.

⁶ *Consuetudines Monasticae*, i, 69.

⁷ O. M. Dalton, *East Christian Art*, pl. xxxix; *Byzantine Art and Architecture*, 430; C. Diehl, *L'Art Byzantine*, ii, 563-6 (ed. 1926).

⁸ *Consuetudines Monasticae*, i, 24, 87, 100.

⁹ Migne, *Patrologia Latina*, cxlv, 873-4.

¹⁰ L. Delisle, *Inventaire des manuscrits de la Bibliothèque Nationale, Fonds de Cluny*, p. 351, nos. 253, 254.

¹¹ *Bedae Opera*, ed. J. A. Giles, viii, 225-367; ix, 262-359.

¹² *Consuetudines Monasticae*, i, 185; A. Wilmart, 'Le Couvent et la bibliothèque de Cluny vers le milieu du XI^e siècle', *Revue Mabillon*, xi, 123.

Sexagesima Sunday; the books of the Kings and of the Chronicles were read in the refectory.¹

The procession on Palm Sunday was most picturesque.² Branches of palms with flowers were distributed to all, and the anthem sung was 'The children of the Hebrews carrying palms and olive branches went forth to meet the Lord'. Thirty of the monastery servants carrying banners led the procession; they were followed by a dozen lay monks with the gold crosses and crucifix, two gold thuribles, the holy water, and candlesticks; next to them eight priests, the first with the reliquary containing the arm of St. Maur, others with the small reliquaries called phylacteries. Sixteen lay monks followed carrying the great statue of St. Peter and three wooden chests of relics which had been taken out of their gold and silver shrines. The children followed with their masters, then more monks, and last of all the abbot, who was followed by a great throng of laymen. All the bells were rung as they went out from the church and through the gate into the town to visit the church of St. Majolus, and the two great bells were rung until the long procession returned and entered the galilee, which was a long narthex, measuring almost a third of the church; in proportion to it, like the forecourt of Solomon's Temple.

On great festivals the church was brilliantly lighted. The Customs (1030-48) record the position of five of the great chandeliers, which are called *corone* or light towers, and are often mentioned as presents from the popes to churches in Rome.³ A magnificent example of the eleventh century now hangs in the nave of the cathedral church of Hildesheim; it is about twenty feet in diameter and has seventy-two candle-holders with twelve large and twelve small towers between them; the towers are symbolical of the heavenly Jerusalem, and within them are little figures of the prophets and apostles (pl. xxxiii, fig. 2).⁴ The *corone* of Cluny were of brass, silver, and gold, or perhaps silver-gilt.⁵ Two were suspended in the choir—one in front of the high altar, the other in front of the ambo or pulpit from which the gospel was read. A third *corona* was in front of the altar outside the choir, another was in the south transept, and a fifth was in front of the altar of St. Benedict in the sacristy.⁶ In front of the altar of the Cross in the nave was a great candle-holder called a triangle or harrow, a sconce on which many candles were set side by side.⁷ A triangular iron sconce is still in the cathedral of Osnabrück.

¹ Migne, *Patrologia Latina*, cxlix, 643.

² *Consuetudines Monasticae*, i, 43-5; cf. Migne, *op. cit.*, cxlix, 698; Herrgott, *op. cit.*, 258, cap. lxiv.

³ *Liber Pontificalis*, ed. L. Duchesne (1886), i, cxlvi.

⁴ W. Lubke, *Ecclesiastical Art in Germany during the Middle Ages* (translated by L. A. Wheatley, ed. 1876), 172.

⁵ *Bibliotheca Cluniacensis*, 1368, cap. lii.

⁶ *Consuetudines Monasticae*, i, 164; cf. Migne, *Patrologia Latina*, cxlix, 656.

⁷ *Ibid.*, ii, 60; Migne, *op. cit.*, cxlix, 656; cf. *Bibliotheca Cluniacensis*, 1368, cap. lii.

Raoul Glaber (*obiit* 1045), the monk whose restless spirit found peace at Cluny for a time under Abbot Odilo, told a story of a citizen of Marseilles who had an insatiable love of travel.¹ When he was in North Africa he came across a hermit who said to him: 'You have come from France; tell me, have you ever seen the monastery of Cluny?' 'I know it well,' was his answer. Then said the hermit: 'Cluny excels all other churches in the Roman world in freeing souls from the domination of the devil.' Raoul Glaber saw the truth of the hermit's saying, since from dawn until before the hour of the midday meal masses were celebrated continuously at the altars of Cluny. Abbot Hugh succeeded Odilo in 1049 and ruled Cluny for sixty years. The monks increased rapidly. There were about 70 in 993 and again in 1042;² in 1083 about 200;³ in 1078 Guy, count of Mâcon, entered the monastery with thirty knights,⁴ and in 1079 Hugh, duke of Burgundy, then a young man of twenty-three, came to serve God under his great-uncle, Abbot Hugh, when he returned from fighting against the Saracens in Spain.⁵ It was the duty of every monk to visit all the altars in the interval between matins and prime, and the monk Ulric, writing about 1083, made a note in his book of Customs that monks should remember not to kneel too long in prayers but to make way for others, since the altars were few for such a multitude of monks.⁶

It was customary at Cluny to say the close of the morning and evening offices of lauds and vespers in another oratory, the church of St. Mary, adjoining the infirmary, which they entered in procession from the *ecclesia major*.⁷ The church of St. Mary, which was used in this way during the rule of Abbot Odilo, became very much overcrowded under Abbot Hugh. In the autumn of 1085 Odo de Lagery, who had been grand prior of Cluny before he was promoted to be cardinal bishop of Ostia in 1078, came to Cluny on his way back to Italy from a mission as legate in Germany, and he dedicated the church of St. Mary in the Infirmary.⁸ If, as Mr. Clapham suggests, the church had been enlarged by the addition of aisles, so that it took the form of three parallel apses, the outside walls were new, and therefore in accordance with the canon

¹ *Rodulfi Glabri Historiarum Libri quinque*, 125.

² A. Wilmart, 'Le Couvent et la bibliothèque de Cluny vers le milieu du XI^e siècle', *Revue Mabillon*, xi, 117 (1921).

³ Migne, *Patrologia Latina*, cxlix, 660.

⁴ *Gallia Christiana*, iv, 1131.

⁵ E. Petit, *Histoire de Bourgogne*, i, 207, note 1, 208.

⁶ E. Bishop, *Origin of the Prymer*, p. xv (*Early English Text Society*, Original Series, 109, Part II); Migne, *op. cit.*, cxlix, 687.

⁷ E. Bishop, *op. cit.*, xxiv; Migne, *op. cit.*, 646, 647; cf. Statutes of Peter the Venerable, cap. lxi, *Bibliotheca Cluniacensis*, 1370.

⁸ H. K. Mann, *Lives of the Popes in the early Middle Ages*, vii, 250-5; Mabillon, *Annales ordinis S. Benedicti*, v, 215.

law a dedication of the church was necessary, not only of the new altars.¹ The church was dedicated in honour of the blessed Virgin Mother and of the crib of Jesus and of All Saints.² The principal altar in the central apse was consecrated in honour of the Virgin Mary and St. Michael the Archangel and all the heavenly virtues, and of St. Andrew, St. John, St. James, St. Bartholomew, St. Matthew, St. Philip, St. Thomas, St. Simon, St. Jude, St. Mark, St. Luke and all the Apostles and the Holy Innocents, and of the Virgins St. Agatha, St. Agnes, St. Cecilia, St. Faith, St. Florence, St. Consortia, St. Mary Magdalene, and all Virgins. The altar in the north apse was consecrated in honour of St. Stephen, St. Clement, St. Marcellus the Pope, St. Laurence, St. Vincent, St. Marcellus bishop of Chalon, St. Quentin, St. Hermes, St. Julian, St. Maurice and his companions, St. Denis, St. Rustic, St. Eleutherius, St. Sebastian, St. Apollinaris, St. Leger, St. Victor of Marseilles and his companions, St. Theodoric, St. Blaise, St. Theodore, and all Martyrs. The altar in the south apse was consecrated in honour of St. John the Baptist, St. Moses the law-giver, St. Sylvester the Pope, St. Hilary, St. Martin, St. Martial, St. Gregory, St. Germanus, St. Remigius, St. Ambrose, St. Augustine, St. Taurin, St. Aquilon, St. Nicholas, St. Jerome, St. Benedict, St. Maur, St. Philibert, St. Columban, St. Giles, St. Nicetius, St. Honorat, St. Lethard, St. Odo, St. Guy, St. Majolus, St. Odilo, St. Gerald, and all Confessors. On the feast days of all these saints the monks went in procession to the church of St. Mary.

Abbot Hugh was confronted with the problem of rebuilding the monastery. The dormitory and refectory were large enough in 1063,³ but, in the words of his biographer, Hildebert, it was no longer tolerable that the monks should be confined to such small monastic offices.⁴ The new buildings were on a much larger scale, and by a fortunate chance they were measured up in 1623 by a carpenter of Cluny, Maître Philibert Legout, in the presence of Dom Joseph du Chastrelet, then cellarer of the monastery. An invaluable and detailed plan of the monastery was made, probably in the seventeenth century, and certainly before 1718, when the medieval monastic offices were pulled down to make way for the spacious cloister and buildings of the eighteenth century, which are now used as a technical school. Both the carpenter's survey and the plan were published by Monsieur Jean Virey on the occasion of the *Millénaire de Cluny* in 1910.⁵ He also printed an inscription, which was put up in the sacristy between 1738 and 1757.⁶ It is therein recorded that the refectory was built in

¹ *Decreti tertia pars* Dist. i, cap. xx; *Decretal. Gregor. ix*, Lib. iii, tit. xxxix, cap. vi. *Corpus juris Canonici*, ed. Friedberg, i, 1299; ii, 634.

² Herrgott, *op. cit.*, 262.

³ Migne, *Patrologia Latina*, cxlv, 873, 874.

⁴ *Bibliotheca Cluniacensis*, 431; cf. Vita S. Hugonis by Gilon, L'Huillier, *Vie de S. Hugues* (Appendix), 606.

⁵ *Recueil du Millénaire de Cluny*, ii, 236-45, pl. xi.

⁶ *Ibid.*, 246, 247.

the time of St. Hugh by Roger, earl in England. The south wall of the old refectory served as a part of the north wall of a new refectory, which was longer by 22 ft. and nearly three times as wide. It was a spacious building supported by two rows of pillars; the walls were resplendent with paintings of subjects from the Old and New Testament and an immense figure of Christ seated in judgement, and underneath these verses:

Ecce dies magnus, quo iudex presidet Agnus,
Sponte, vel ingratum cui subditur omne creatum:
Infelix vere, cui non datur ista timere,
Nam presens ignis domus est eterna malignis,
Deo gratias.

The principal founders and benefactors were also painted on the walls.¹ If the inscription of 1738 in the sacristy is correct, Roger, earl in England, was among them, and it is only possible to identify him with the great earl of Shrewsbury, Roger de Montgomery, the founder of the Cluniac priory of Wenlock in Shropshire, who died in 1093.² Moreover, Orderic Vitalis has recorded that Earl Roger was a benefactor to Cluny; Orderic's father was in his service, and when a little boy Orderic went to school at Shrewsbury, and probably he remembered seeing the great Earl Roger, whose munificence he recalled in his *Ecclesiastical History*.³

More space had been provided by the enlargement of the church of St. Mary adjacent to the infirmary, but the monks were unduly crowded and unable to keep their proper ranks in the choir of the *ecclesia major*, as it is always called in the eleventh-century Customs. Abbot Hugh appealed to his friend Alphonso VI, king of Castile, for help to build a larger church. King Alphonso replied: 'There is no one in the world whom I love as I do you, and there is no place under heaven of which I am so warm a friend as I am of Cluny. I am occupied in pacifying the cities of Spain. Afterwards, which God willing shall be in the near future, I will help you to build your church. Now I send you a gift of ten thousand talents.'⁴ King Alphonso had already doubled the annual payment of 100 ounces of gold, the equivalent of 1,000 mancuses, which his father Sancho promised to Cluny.⁵ The Spanish kings did not at that time coin their own gold and must have used the Byzantine besants or Arab dinars, weighing rather more than half a sovereign. The talent

¹ *Bibliotheca Cluniacensis*, 1640.

² *Dictionary of National Biography*, xlix, 101; Orderic Vitalis, *Historia Ecclesiastica*, ed. A. Le Prevost, ii, 415, 421-3.

³ Orderic Vitalis, *op. cit.*, ed. A. Le Prevost, ii, 301 (Société de l'Histoire de France); *Dictionary of National Biography*, xlii, 241.

⁴ *Recueil des Chartes de Cluny*, iv, 697.

⁵ *Ibid.*, iv, 627, 697; L'Huillier, *Vie de St. Hugues*, 584.

was possibly in this instance the equivalent of a mancus, and 1000 talents was over £500.¹

The letter from King Alphonso is undated, and the suggested year, 1080, is perhaps too early; in 1085 he drove the Moslems out of Toledo, and in or about 1086 he married Constance, the widow of Hugh, count of Chalon-sur-Saône, and a daughter of Robert, son of Robert the Pious, duke of Burgundy, and therefore a kinsman of Abbot Hugh.² The old Cluniac monk Gilon, who wrote the earliest and most reliable of the several lives of Abbot Hugh, narrates that Hugh was sixty-five years of age and had ruled Cluny for forty years when the foundations of the new church were laid. He had hesitated to begin the great work of building a new church, when an old and sick monk named Gunzo had a vision in which St. Peter appeared and commanded him to tell Abbot Hugh that as he had increased the numbers of the monks and dedicated a spiritual church to God, he should begin and build a church on earth for them. St. Peter continued that he took it ill that his sheep were crowded into that narrow old sheepfold, and in the vision the monk saw St. Peter mark out a plan with cords with all the measurements of the new building.³ The plan of an ambulatory with radiating chapels, double transepts, and a nave with double aisles, made ample provision for numerous altars and processions and for pilgrims (pl. XL).

On 30th September 1088 a new *ecclesia major* was begun on a site to the north of the *ecclesia major* which had been dedicated in 981.

It is difficult to assign exact dates to the building of the new *ecclesia major*. The only contemporary general history in which some of the principal events at Cluny are recorded is the Ecclesiastical History of Orderic Vitalis, the monk of the Norman monastery of St. Évroul.⁴ No general chronicle and no detailed annals were written at Cluny in these critical years. Lives of the abbots were written soon after their deaths; papal bulls, charters, letters, and other documents were carefully preserved.⁵ The chronicle of Cluny was compiled during the rule of Abbot Jacques d'Amboise (1485-1510) by the grand prior, François de Rivo,⁶ and in addition to some sparse early annals and the lives of the abbots he used a chronicle compiled by the monk Gerald of Auvergne during the rule of Abbot Yvo I (1257-75).⁷ It is significant that for the first time François de Rivo adds to the *ecclesia major* the words *que dicitur S. Hugonis*, a description which has been adopted by archaeologists, who have perhaps

¹ I am indebted to Dr. G. F. Hill, F.S.A., for this information.

² Poupardin, *Monuments de l'histoire des abbayes de St. Philibert*, 104, note 3.

³ L'Huillier, *Vie de St. Hugues*, 605, 606.

⁴ Orderic Vitalis, *Historia Ecclesiastica*, ed. Le Prevost, iii, 463; iv, 298, 426; v, 29-31.

⁵ *Bibliotheca Cluniacensis*, passim; *Recueil des Chartes de Cluny*, vols. iv and v.

⁶ *Bibliotheca Cluniacensis*, 1627-84.

⁷ *Ibid.*, 1617-27.

laid too much stress on them. When Innocent IV celebrated mass at Cluny in 1245 the building was called simply the *ecclesia major*. Errors of date occur in both chronicle and annals,¹ for the monks lacked the aids to chronology which are indispensable to the modern historian.

In the autumn of 1095 Pope Urban II was on his way to preach the first crusade at the Council of Clermont in Auvergne. He stayed a week at Cluny. It was ten years since he had come to Cluny and dedicated the church of 'St. Mary adjacent to the infirmary, and then the new *ecclesia major* was not begun. On this occasion the former grand prior of the monastery returned as pope, and on 25 October he consecrated the first and greater altar in honour of God and in memory of St. Peter and St. Paul.² He also consecrated the second altar, which was the Morrow mass altar, in honour of the Virgin Mary,³ and by his command, on the same day, the archbishops of Lyons and Pisa and the bishop of Segni consecrated three altars in the three first chapels of the ambulatory in the presence of bishops and cardinals and a great throng. Masses were celebrated at these altars and the pope preached a sermon to the people. 'In your presence to-day,' he said, 'we consecrate the high altar with the others of this new church which are ready, and we appeal to you for the building of the remainder of the church'.

The scene is depicted in a manuscript of the late twelfth century once in the library of St. Martin des Champs in Paris.⁴ Abbot Hugh wears the episcopal insignia—a privilege granted to him by Urban II in 1088.⁵ The high altar is shown with the ciborium over it (pl. xxxiv, fig. 2).

Abbot Hugh and the convent of Cluny pledged themselves and their successors to keep Pope Urban II in grateful remembrance. While he lived they would remember him by name at the daily high mass; after his death—which occurred in 1099—they would commemorate him every year in the same way as they commemorated their own abbots. They recorded in this document that on the occasion of the consecration of the high altar Urban II commanded that when the time arrived for the dedication of their new church the ceremony should take place on the same date (25th October).⁶

The work on the church continued, and before the end of 1095 Dalmatius, bishop of Compostella, who had been a monk of Cluny, came to consecrate

¹ e.g. cf. Mabillon, *Annales ordinis S. Benedicti*, vi, 186.

² *Bibliotheca Cluniacensis*, 518, 519; cf. Orderic Vitalis, *Historia Ecclesiastica*, ed. Le Prevost, iii, 463.

³ *Bibliotheca Cluniacensis*, 1368, cap. liv.

⁴ L. Delisle, *Inventaire des Manuscrits de la Bibliothèque Nationale, Fonds de Cluny*, p. 233, no. 129.

⁵ *Bibliotheca Cluniacensis*, 515.

⁶ E. Baluze, *Miscellanea*, vi, 474 (ed. 1713).

the altar of St. James in the first chapel on the south side of the ambulatory.¹ Other altars were consecrated as the chapels were finished; one was consecrated by Geoffrey, bishop of Amiens, in or about 1104.²

In 1109 Abbot Hugh died and was buried behind the Morrow mass altar,³ 'in the church which he had begun from the foundations'.⁴ In 1113 or 1114 his life was written by an old Cluniac monk, Gilon.⁵ It is the earliest and most reliable of several lives, but it was superseded almost immediately by a life written by Hildebert, bishop of Le Mans, who expanded Gilon's work and wrote in more elegant Latin.⁶ Gilon wrote that Abbot Hugh 'began and erected such a church within twenty years that if an emperor had built it within so short a time, it would have been considered marvellous'.⁷ 'The structure was large enough to hold a thousand monks, and so,' Gilon continued, 'it refreshes with its breadth the knights of Christ as though they had come out of prison and rejoices them as they take their places in the order of their rank in the spacious choir, whereas before they were confined in such a narrow place.' The monks had entered into possession of their new choir before the death of St. Hugh, and I venture to suggest that the church built in the twenty years between 30th September 1088 and 29th April 1109 was the choir with its ambulatory and radiating chapels, the double transepts, and the bays of the nave within the ritual choir. The recent rediscovery by Professor Kenneth Conant of the chapel of St. Gabriel in the Tour de l'Horloge,⁸ the tower built over the south transept, does not conflict with this view. The inscription, which he found painted on the wall in stucco, is partly destroyed; it proves that the chapel was consecrated by Peter, bishop of Pampeluna, who died in 1115. All that remains of the date is 'Millesi', and the words 'centesimo nono' (cētesīo nono) fill the blank space as feasibly as any other conjecture.

The nave was completed during the rule of Abbot Pons (1109-22), as is recorded in a letter addressed to him late in 1121 by a monk of Cluny named Hugh.⁹ The *ecclesia major* built by Abbot Majolus stood between the new *ecclesia major* and the new cloister of Abbot Hugh. The monk Hugh recalled to Abbot Pons that after the new church was finished he gave instructions that

¹ Mabillon, *Annales ordinis S. Benedicti*, vi, 187; cf. A. de Ypez, *Crónica de la Orden de S. Benito*, vi, 436 (1617).

² Guibert of Nogent, *Histoire de sa Vie*, p. 200 ('Collection de textes pour servir à l'étude de l'histoire', xl, 1907).

³ *Bibliotheca Cluniacensis*, 1643.

⁴ *a fundamentis inchoavit*. Orderic Vitalis, *Historia Ecclesiastica*, ed. Le Prevost, iv, 298.

⁵ L'Huillier, *Vie de St. Hugues*, Appendix, 574-618 (1888).

⁶ *Bibliotheca Cluniacensis*, 413-28; L'Huillier, *op. cit.*, 565-72.

⁷ L'Huillier, *Vie de St. Hugues*, 606.

⁸ *Bulletin Monumental*, lxxxvii, 55-64 (1928).

⁹ *Bibliotheca Cluniacensis*, 557-61; L'Huillier, *Vie de St. Hugues*, 565.

the old church should be destroyed and the cloister enlarged, but that he saved the high altar of St. Peter and St. Paul and therefore preserved the apse of the old church. The east and west walks of the cloister were extended and a new north walk was made along by the side of the new chapel, in honour of the Virgin, commonly called the Abbot's chapel, which had been consecrated on 16th August 1118 by Guy, archbishop of Vienne.¹ The apse of St. Pierre-le-Vieux with its eastern chapels was left, and it served as a quiet private chapel for the monks.² The western towers of the narthex of St. Pierre-le-Vieux were also spared and served as offices for the chamberlain in the new part of the western range of buildings.³

Orderic Vitalis is the sole authority for the disaster in 1125 when 'the great nave of the church which had been recently built fell to the ground'.⁴ In 1130, owing to the schism in the papacy, Pope Innocent II came to France and was received at Arles. When Abbot Peter the Venerable and the monks of Cluny heard of his arrival they sent sixty horses or mules and brought the pope and the cardinals to Cluny. They kept him and his train there for eleven days, and arranged for him to dedicate their new church on 25th October, an occasion of great rejoicing, in the presence of a vast throng of people.⁵ In a letter to the pope written not long afterwards Abbot Peter the Venerable told him that several of his predecessors would have greatly desired to undertake the solemn dedication of the *ecclesia major* of Cluny which had fallen to his lot.⁶ Abbot Peter the Venerable testified on two occasions that Henry I, king of England, finished the greater church which was begun by Alphonso VI, king of Spain⁷ (*ob.* 1109). The historian Robert of Torigni, who became a monk of Bec about 1128 and abbot of Mont St. Michel in 1154, related in his 'History of Henry I', which he finished in or before 1139, that the king built at his own expense the greater part of the church of Cluny⁸—a statement which can only be precise if by *ecclesia* Robert desired his readers to understand the new nave, in the place of the nave which had crashed on the terrible day in 1125 when the late Abbot Pons took forcible possession of the monastery and occupied it for several months. Pons plundered the treasure and removed

¹ *Bibliotheca Cluniacensis*, 564; *Recueil du Millénaire*, ii, 239, 240, pl. xi.

² *Bibliotheca Cluniacensis*, 560, 1368, cap. liiii.

³ *Recueil du Millénaire*, ii, 240.

⁴ *Historia Ecclesiastica*, ed. Le Prevost, iv, 426.

⁵ *Historia Ecclesiastica*, v, 30, 31; *Recueil des Chartes de Cluny*, v, 360, note.

⁶ *Bibliotheca Cluniacensis*, 704.

⁷ *Epistolarum*, Lib. iii, no. 11; *Bibliotheca Cluniacensis*, 794; G. F. Duckett, *Charters and Records of Cluny*, ii, 105; in 1458, on a petition from Cluny to Henry VI, which contained several chronological errors, it was alleged that Abbot Hugh approached Henry I, Duckett, *op. cit.*, ii, 77.

⁸ L. Delisle, 'Matériaux pour l'Édition de Guillaume de Jumièges', *Bibliothèque de l'École des Chartes*, lxxi, 506-26; Migne, *Patrologia Latina*, cxlix, 900; *Dictionary of National Biography*, xlviii, 369.

the gold candlesticks and chalices and stripped the shrines.¹ Cluny was poor indeed when Abbot Peter the Venerable was able to return to Cluny in October 1125 and plan to repair the ruined nave. The close link between Henry I and Cluny was his nephew, Henry of Blois, who had been sent to Cluny as a boy by his widowed mother, Adela of Blois. In 1126 Henry I sent for the young monk of Cluny to be abbot of Glastonbury, and promoted him to the wealthy see of Winchester in 1129.² Henry of Blois was a devoted friend of Abbot Peter the Venerable and a great benefactor of Cluny. Work on the church was not finished in 1130. In 1131 Henry I promised £66 13s. 4d. a year to Cluny from the exchequer, and the grant was approved and confirmed by Innocent II.³ In 1132 the pope himself granted an indulgence of forty days to all who should be present at the annual feast of the dedication, a privilege which would attract offerings from guests and pilgrims.⁴ In the same year an exception to the general rule of silence was made for the workshops of the new church and the workmen engaged therein.⁵ Access to the cloister was restricted to them, and other lay folk who had turned the cloister into a public thoroughfare while the work was going on were excluded. The life of Abbot Peter the Venerable was written by a monk Ralph who was often with him on his travels.⁶ He relates that Abbot Peter not only built the church with great zeal, but also adorned it with costly ornaments, and, again, that Abbot Peter invited Innocent II to consecrate the church which he himself had built (pl. XL).

These several evidences lead to the conclusion that the nave was rebuilt by Abbot Peter the Venerable, and that the principal benefactor was Henry I.

The documentary evidence has not been justly treated in recent archaeological controversy. The interpretation of the monk Gilon's words 'within twenty years' has proved a stumbling-block. It has been wrongly assumed that Urban II dedicated the church, and that therefore the choir and double transepts were finished in 1095, and the nave, nearly finished in 1109, was completed about 1113.⁷ A vital distinction between the consecration of a few altars and the solemn dedication of a church is thus ignored. At first the consecration of the altar implied the consecration of the building, but gradually the ceremonies were extended to the doors, the walls, the pavement, and

¹ *Bibliotheca Cluniacensis*, 553.

² Migne, *Patrologia Latina*, cxlix, 903; *Dictionary of National Biography*, xxvi, 112.

³ *Calendar of Documents preserved in France*, ed. J. H. Round, 507; Bernard et Bruel, *Recueil des Chartes de Cluny*, 369, 370.

⁴ *Bibliotheca Cluniacensis*, 1381.

⁵ *Ibid.*, 1360, cap. xix; 1361, cap. xxiii.

⁶ E. Martène, *Veterum Scriptorum Amplissima Collectio*, vi, 1192, 1193 (1729), from a manuscript at Souvigny; reprinted in Migne, *Patrologia Latina*, clxxxix, 15-27.

⁷ e.g. Kingsley Porter, *Romanesque Sculpture of the Pilgrimage Roads*, i, 80-2; J. H. Pignot, *Histoire de l'Ordre de Cluny*, ii, 152.

ornaments,¹ as for instance in the solemn dedication of the abbey church of Marmoutier by Pope Urban II on 10th March 1096 with the assistance of the archbishops of Tours and Lyons and the archbishop of Reggio. On that occasion the walls were consecrated with crosses set upon them, and the alphabet in Latin and Greek was traced on the pavement.² The monks of Cluny were not under the delusion in 1095 that the new church was dedicated, nor was the grand prior who compiled the chronicle late in the fifteenth century.³ The fiction of the first and second dedications of the church in 1095 and 1130 had its origin in the index of vol. v of the *Annales ordinis S. Benedicti* (1703-39), but the error is not in the text of the volume.⁴ It occurs again in an inscription compiled in or about 1738 which was put up in the sacristy at Cluny, and is now known only from a copy made after the Revolution.⁵ That inscription appears to be the sole authority for the statement that the church was the work of twenty-five years. Monsieur de Lasteyrie suggested that the building was finished in about thirty years, and that in 1125 only the vaulting of the nave fell, and he deliberately set aside the statement of Orderic Vitalis, although he recognized it to be 'the categorical evidence of a contemporary', on the plea that the nave could not have been rebuilt before the dedication by Innocent II in 1130.⁶ Orderic Vitalis was at Cluny on a visit in 1132 when two hundred priors of the order assembled at a general chapter.⁷ On the third Sunday in Lent 1212 monks walked in the procession. Orderic wrote: 'I rejoiced to be there, and I went in procession with them that Sunday from the basilica of St. Peter and I entered through the cloister into the church of St. Mary and offered my prayers.'

Henry I's daughter, the Empress Matilda, was also devoted to Cluny. 'As wax reproduces the impression of a seal, so the empress is the very image and counterpart of her father's features,' wrote Abbot Peter the Venerable, who visited her at Rouen, and he added, 'She is the embodiment of his wisdom and munificence'.⁸ Robert of Torigni related that she possessed wonderful treasures of Byzantine art; some of them she acquired during her married life with the Emperor Henry V of Germany, when she brought incomparable treasures

¹ Cabrol, *Dictionnaire d'archéologie chrétienne et de liturgie*, ii, 374-405.

² Bouquet, *Recueil des historiens de la France*, xiv, 99.

³ Baluze, *Miscellanea*, vi, 474 (ed. 1713); *Bibliotheca Cluniacensis*, 1639.

⁴ *Annales ordinis S. Benedicti*, v, 356, 806; cf. the Life of Pope Urban II by Dom Ruinart: 'Verum cum nimium tunc adhuc esset imperfecta curavit sanctus abbas res ita disponi ut saltem majus altare adveniente pontifice eo in statu esset ut posset ab eo consecrari', *Ouvrages posthumes de D. Jean Mabillon et D. Thierry Ruinart*, ed. Thullier, iii, 198 (1724).

⁵ *Recueil du Millénaire de Cluny*, ii, 246, 247.

⁶ *L'Architecture religieuse en France à l'époque romane*, 424, note 4 (ed. 1929).

⁷ *Historia Ecclesiastica*, ed. Le Prevost, v, 29-31.

⁸ G. F. Duckett, *Charters and Records of Cluny*, ii, 104, 105.

from Italy, and she had many gifts from her father out of the inexhaustible treasures of England.¹ She gave Cluny some bells which were cast in England of a different metal from the French bells; in 1458 they were still called the English bells and were rung on certain days at certain hours.² Her most notable gift was the great seven-branched candlestick which stood before the high altar and was 18½ feet high.³ It was made of copper gilt of marvellous workmanship and adorned with crystals and beryls and in imitation of the candlestick which Moses commanded Bezaleel, the craftsman of the tribe of Judah, to make for the Tabernacle⁴—on each of the six branches going out of the sides three cups made like almond blossoms, a knop, and a flower. Bede saw in the candlestick of the Tabernacle a symbol of the universal church of which the shaft was Christ, and the branches were the preachers who have sung a new song in the world.⁵ St. Benedict of Aniane placed such a candlestick in the new church which he began to build by command of Charlemagne in 782, and the monks of Cluny adopted the Customs of Benedict of Aniane.⁶ On the candlestick which Matilda gave to Cluny this verse was inscribed:—

Ad fidei normam voluit Deus hanc dare formam,
Que quasi prescriptum doceat cognoscere Christum :
De quo septene sacro spiramine plene
Virtutes manant, et in omnibus omnia sanant.

It stood four feet higher than the bronze candlestick in the cathedral of Brunswick, which was, according to tradition, a gift from Henry the Lion, duke of Saxony (*ob.* 1195) (pl. xxxv, fig. 1).⁷

In the semidome of the apse of the new church, in the place then usually filled by mosaics in the churches of Rome and Ravenna, on a gold background a great seated figure of Christ was painted, his right hand raised in blessing, his left resting on a sealed book, his throne being in the clouds between the symbols of the four evangelists. The painting survived until after the Revolution, and was drawn by Lenoir before the church was blown up (fig. 1).⁸ It was doubtless the work of one or more of the craftsmen who executed the remarkable wall paintings in the chapel of Berzé-les-Moines. Berzé is on a steep hillside above the road between Cluny and Mâcon. It was a small property belonging to Cluny and a favourite place of rest for Abbot Hugh in

¹ Migne, *Patrologia Latina*, cxlix, 896, 897; cf. *ante*, p. 150, n. 3.

² Duckett, *op. cit.*, ii, 78.

⁴ *Exodus*, xxv, 31, xxxvii, 17.

⁶ *Consuetudines Monasticae*, iii, 151; R. Graham, *English Ecclesiastical Studies*, i, 2.

⁷ W. Lübke, *Ecclesiastical Art in Germany*, 176, 177.

⁸ M. A. Lenoir, *Monumens de France* (ed. 1840), p. 24, pl. xix.

³ *Bibliotheca Cluniacensis*, 1640.

⁵ *Beda Opera*, viii, 252.

the last years of his life. The chapel has a nave, choir, and apse, and is built of the same masonry as the abbey church, about 1100, as Monsieur Jean Virey has proved recently from the evidence of documents.¹ There can be no reasonable doubt that some of the craftsmen who were at work at Cluny were summoned to Berzé to paint this chapel.

In 1887 these paintings were completely covered with whitewash, which was removed by a country curé, the Abbé Jolivet, who began by scraping them with a penknife, with the assistance of the vicaire of the parish church of Notre Dame at Cluny. In the semidome of the apse Christ is seated in glory, a splendid figure, between twelve apostles (pl. xxxvi, fig. 1). There are scenes representing the story of St. Blaise and the martyrdom of St. Laurence, and figures of unfamiliar eastern saints—St. Dorotheus, St. Gorgon, St. Abdon, St. Sennen (pl. xxxvi, fig. 2). The paintings were described in detail by Monsieur Leonce Lex.² They show a strong Byzantine influence, and, moreover, some of them are the work of men who were well acquainted with the mosaics at Ravenna. They have attempted to reproduce by bands of white dots the gleaming mother-of-pearl³ which is used in the later mosaics of St. Apollinare Nuovo and in profusion in St. Vitale. One artist has reproduced the head-dress of the Empress Theodora and the ladies of her court in St. Vitale. The conclusion is that Greek artists were working at Cluny under St. Hugh as at Monte Cassino under Abbot Desiderius.⁴ Whether they also painted the scenes from the miracles of Christ on the walls of the abbot's chapel consecrated in 1118 is unknown; to the eyes of Abbot

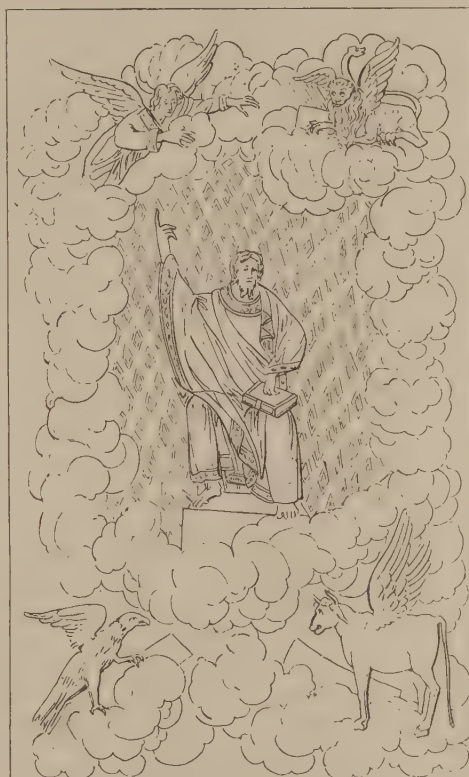


Fig. 1. The drawing by Lenoir.

¹ J. Virey, 'St. Hugues et la Chapelle de Berzé', *Annales de l'Académie de Mâcon*, troisième série, xxv, 445-50.

² 'Peintures Murales de la Chapelle du Château des Moines de Cluny à Berzé-la-Ville'. *Millénaire de Cluny*, ii, 248-56, pls. xii-xix; Lex et P. Marten, 'Peintures Murales de la Chapelle du Château des Moines de Cluny à Berzé la Ville', *Bulletin archéologique du Comité des Travaux historiques et scientifiques*, 1893, no. 3.

³ O. M. Dalton, *Byzantine Art and Architecture*, 358.

⁴ C. Diehl, *Manuel d'Art Byzantin*, ii, 715 (ed. 1926); O. M. Dalton, *op. cit.*, 266, 428.

Peter the Venerable that chapel was more beautiful than any other church in Burgundy.¹

The destruction of a great part of the library of Cluny, when the Huguenots attacked the monastery in 1562, is the more regrettable since illuminations betray the influence of Byzantine painting,² and manuscripts written during the rule of Abbot Hugh would have been invaluable for comparison with the wall-paintings of Berzé. The monk Durannus laboured so greatly in producing church service books that Abbot Hugh granted him a double commemoration.³ The special glory of the monk Albertus, who entered Cluny under St. Hugh, was the great Bible which he wrote at the command and expense of Abbot Pons (1109-22).⁴ He read it twice from beginning to end and collated it with other texts with the help of another monk, Opizone, and Peter the precentor supplied him with necessities with joy and zeal. 'It is a marvellous Bible,' the grand prior wrote late in the fifteenth century, 'great and precious in lettering, in accuracy, and also for its binding adorned with crystals,' and it was then kept in the entrance to the library. It was well known to Bishop Henry of Blois, under whose influence the great Bible of Winchester was produced in the cathedral priory of St. Swithun (1160-70).⁵ It was probably the prototype of the great Bible of Souvigny, the Cluniac priory in which Abbots Majolus and Odilo were buried. The Bible of Souvigny, now in the Musée at Moulins (départ. Allier), was written and illuminated late in the twelfth century; it contains a hundred and seventeen great capital letters and some splendid miniatures (pl. xxxvii).⁶

In 1079 Abbot Hugh sent monks to Paris to take possession of St. Martin des Champs, which had been founded by Henry I, King of France, and given to Cluny by his son Philip I. An illumination, dating from the end of the eleventh century, represents the church, King Henry of France on his throne, and the grant of the first charter (pl. xxxv, fig. 2).⁷ Another manuscript from the library of St. Martin des Champs of the late twelfth century⁸ has among its illuminations a fine seated Virgin with a monk at her feet, and a Transfiguration which is Byzantine in conception,⁹ as may be seen by comparing it with a small portable mosaic in the Louvre (pl. xxxviii).

¹ *Bibliotheca Cluniacensis*, 790.

² O. M. Dalton, *Byzantine Art and Architecture*, 266.

³ *Bibliotheca Cluniacensis*, 1645.

⁴ *Ibid.* 1645.

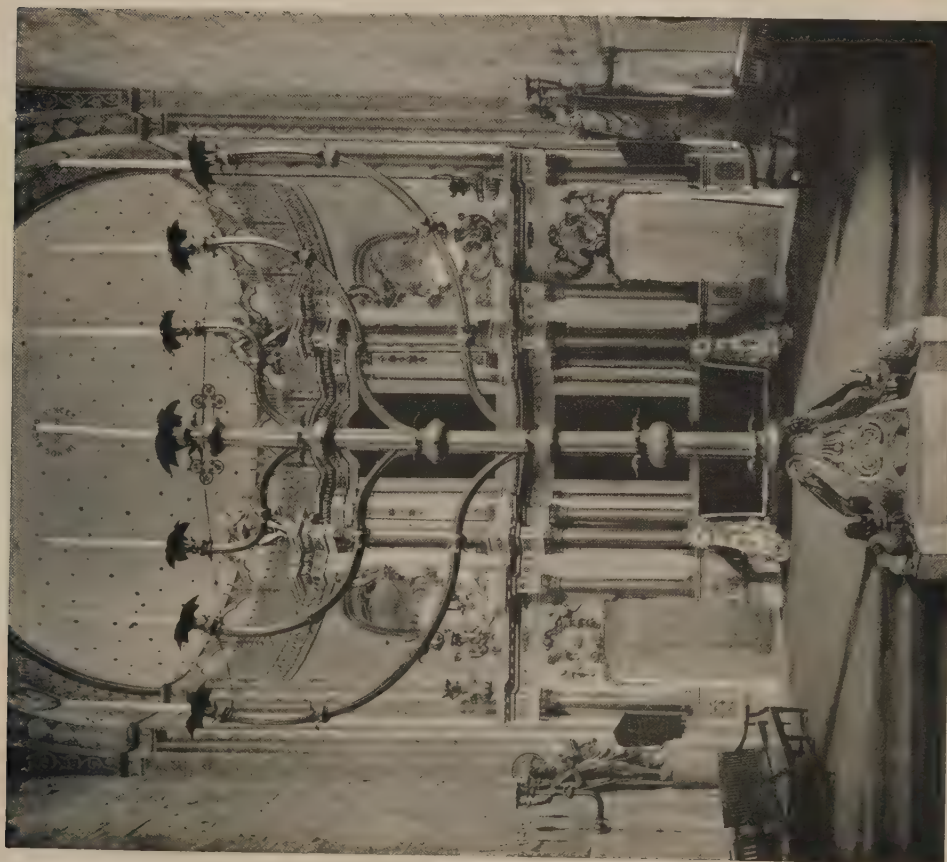
⁵ E. G. Millar, *English Illuminated Manuscripts from the tenth to the thirteenth century*, p. 34.

⁶ H. Buriot-Darsiles et J. Locquin, *Le Musée de Moulins*, 64-72 (*Les Cahiers du Centre*, 1915).

⁷ MS. Add. 11, 662, British Museum; *Revue de l'Art Chrétien*, 3rd series, viii, 122-8 (1890).

⁸ MS. Fonds de Cluny, no. 129; L. Delisle, *Inventaire des manuscrits de la Bibliothèque Nationale, Fonds de Cluny*, p. 223.

⁹ O. M. Dalton, *Byzantine Art and Architecture*, 655; E. Mâle, *L'Art religieux du XII^e siècle en France*, 95 (ed. 1922).



Photo, Kunsthandlung, A. Dörband, Brunswick

Fig. 1. The Candlestick in the Cathedral Church of Brunswick



Fig. 2. The grant of the foundation charter of St. Martin des Champs by Henry I, King of France. MS. Add. 11,662, British Museum



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Fig. 1. Wall-painting in the apse, Berzé-les-Moines. Christ in Glory



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Fig. 2. Wall-painting in the apse, Berzé-les-Moines. SS. Dorotheus, Sennen, etc.



Fig. 1. The ark carried round the walls of Jericho



Fig. 2. (a) David feeding his flock in the wilderness.
(b) David's victory over Goliath

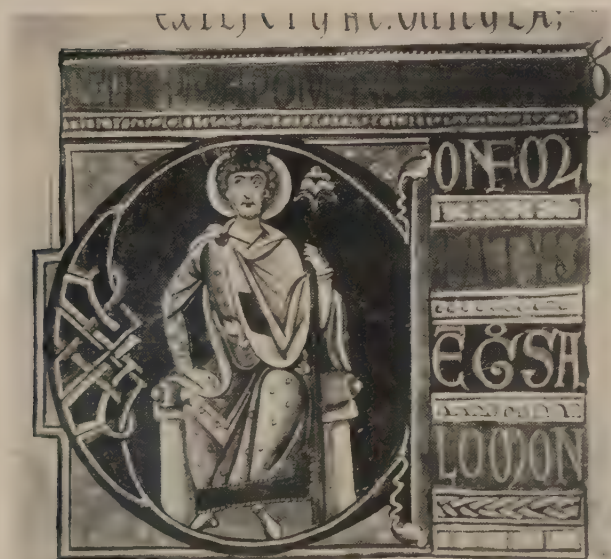


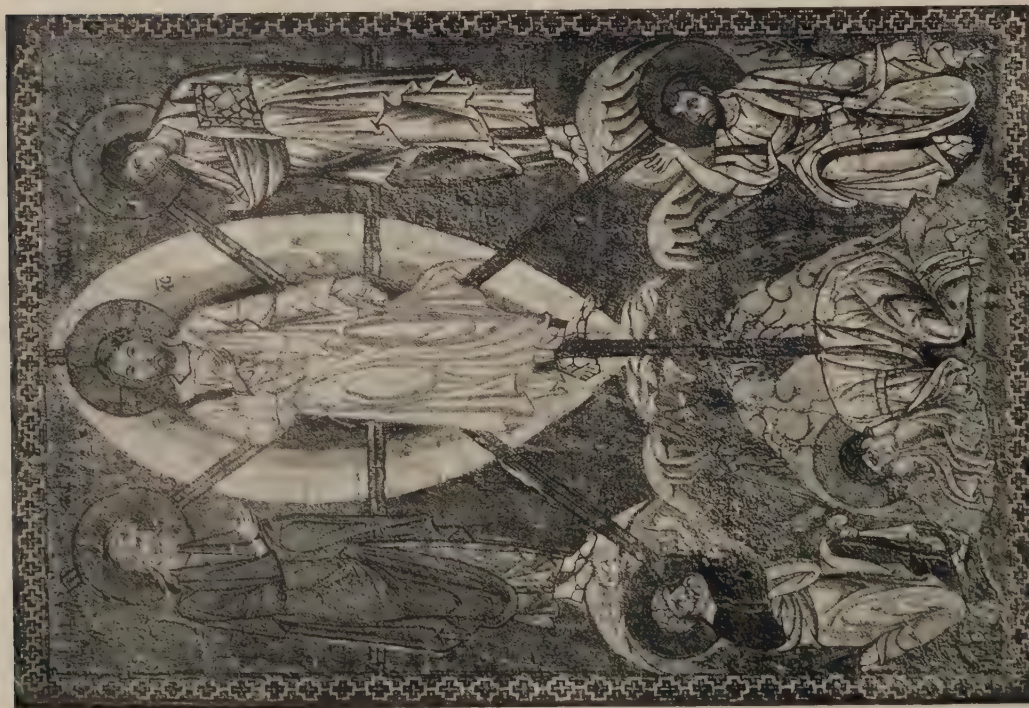
Fig. 3. King Solomon



Photos, B. Scharlowsky

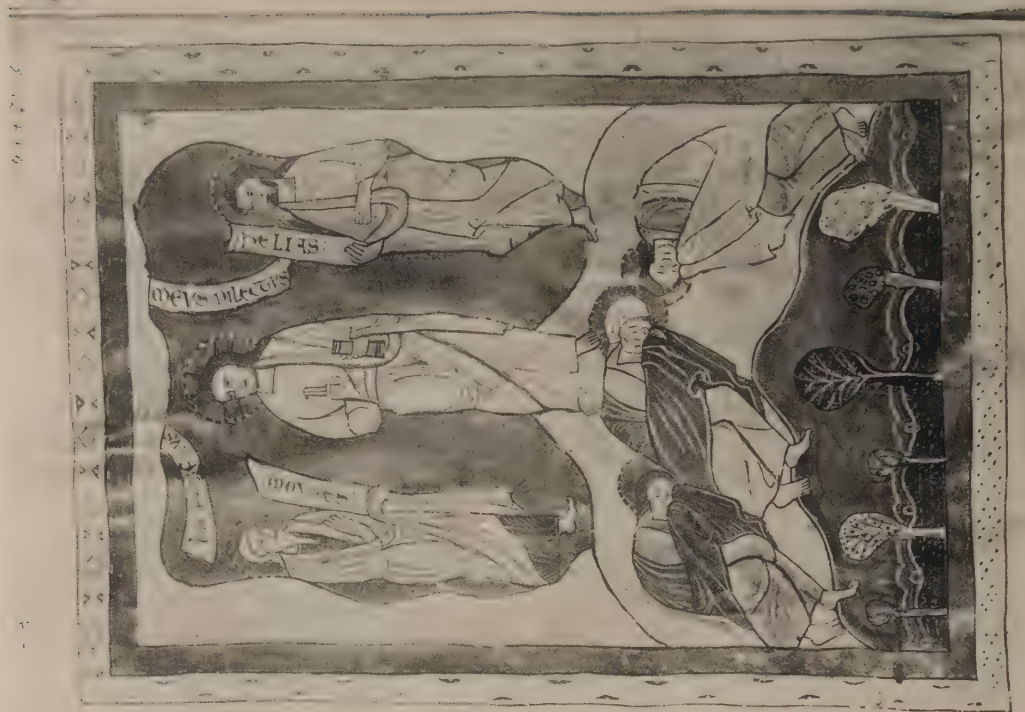
Fig. 4. The Ascension

BIBLE OF SOUVIGNY. MUSÉE DE MOULINS



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Fig. 1. A Mosaic of the Transfiguration. Musée du Louvre



Louis Lecuyer, Paris

Fig. 2. The Transfiguration. MS. Fonds de Cluny 129, Bibliothèque Nationale

The complete disappearance of the treasure of Cluny is a loss at least as serious as the destruction of most of the library. The long inventory¹ of ornaments and vestments in 1389 is tantalizing, but much of the early treasure had then disappeared. In 1125 Abbot Pons carried off the gold crosses, candlesticks, thuribles, chalices, and many vessels of great weight, and even the gold and silver shrines.² Under Abbot Peter the Venerable the church of Cluny was once more adorned with costly ornaments.³ It is perhaps a marvel that so much work of the medieval goldsmiths has survived to the present day. In 1149 Henry of Blois, bishop of Winchester, lent Cluny a thousand ounces of gold, in gold and silver, to be repaid at the rate of a hundred ounces of pure gold a year.⁴ The monastery was in debt to the amount of two thousand marks of silver, and the bishop sanctioned the removal of five hundred ounces of gold from the great crucifix which he had given, on the condition that the abbot and monks provided sixty ounces of the best gold every year until the crucifix was entirely repaired. They gave a pledge that they would never remove from the church the crucifix, the gold cup set with gems in which the sacrament was reserved, the incense vessels of 'Greek' workmanship, the flagon, the silver Constantine, and the altar frontal woven with gold.

These objects were his own gifts to the treasure of Cluny. The silver Constantine may have been a Byzantine plaque with a figure of the emperor; on one of the gold and enamel plaques in the Crown of Hungary, Constantine is represented standing, nimbed, crowned, in a long tunic and mantle, holding the labarum in his right hand.⁵

The precious jewels which Henry I gave from the royal chapel as ornaments for the great church of Cluny were remembered in 1458, when the envoys from Cluny assured King Henry VI that 'so long as the walls of Cluny stand we shall not cease to offer prayers for our holy founders, the kings of England.'⁶

¹ *Revue de l'Art Chrétien*, 3rd series, vi, 195-205 (1888).

² *Bibliotheca Cluniacensis*, 551.

³ E. Martène, *Veterum Scriptorum et Monumentorum Amplissima Collectio*, vi, 1192, 1193.

⁴ G. F. Duckett, *Charters and Records of Cluny*, i, 80, 81, ii, 81.

⁵ E. Molinier, *Histoire générale des Arts appliqués à l'Industrie*, iv, 53.

⁶ G. F. Duckett, *Charters and Records of Cluny*, ii, 77, 83.

PART II

On the plan of the Early Churches at Cluny. By A. W. CLAPHAM.

THE architectural history of the abbey of Cluny, an abbey which wielded a greater influence than any other monastic house in the Middle Ages, is obviously of sufficient importance to justify an attempt to reconstruct the plan and arrangement of its earliest buildings. The data, upon which this reconstruction has been based, have been supplied to me, in their entirety, by Dr. R. Graham, and my own part has been confined to their interpretation.

The first church at Cluny, as we have seen,¹ was consecrated in 927 in honour of SS. Peter and Paul. In the eighteenth century the Benedictines of St. Maur² identified this first building with the chapel of St. Mary in the Cemetery, a small tri-lobed building shown, as then existing, on the late seventeenth-century plan of the abbey which has preserved for us so much of the medieval arrangement of the building at Cluny. This identification is extremely improbable as, apart from its diminutive size, it belongs to a type of plan which was not then commonly used for any but subsidiary buildings. The form was common in early Christian architecture, from the fifth century onwards, and survived in France to the twelfth century or even later. The plan of the Cluny building is closely paralleled in the chapel of S. Croix³ at Montmajour Abbey (Bouches du Rhône), at S. Gilles, Montoir (Loir et Cher)⁴ and at St.-Saturnin,⁵ near St.-Wandrille (Seine Inférieure), all three buildings being of late eleventh or early twelfth-century date.

The cemetery-chapel being thus dismissed as a possible representative of the first church at Cluny, a suggestion may be made as to a possible alternative. When the third church at Cluny was begun at the close of the eleventh century, its predecessor, the second church, was left standing to the south of it. It is possible that the same thing happened when the second church was built, though, in this case, the first church was left standing to the north of its successor. There is no direct evidence of this, but we find in the description of the second church and buildings, to which fuller reference will be made in the sequel, that the sacristy with a second building adjoining it on the west, lay

¹ *Ante*, p. 144.

² *Voyage Littéraire de deux religieux Bénédictins de la Congrégation de St.-Maur*, Part I, 223 (1717); cf. *Bibliotheca Cluniacensis*, 1646, 1647.

³ F. Benoit, *L'Abbaye de Montmajour* (1928), p. 47.

⁴ *Congrès Archéologique de France, Blois* (1926), p. 294.

⁵ *Congrès Archéologique de France, Rouen* (1927), p. 571.

parallel and north of the nave of the church. The sacristy is described¹ as being '58 ft. long with a tower at the head', and the adjoining building as being

CLUNY

PLAN OF THE SECOND CHURCH & MONASTIC BUILDINGS

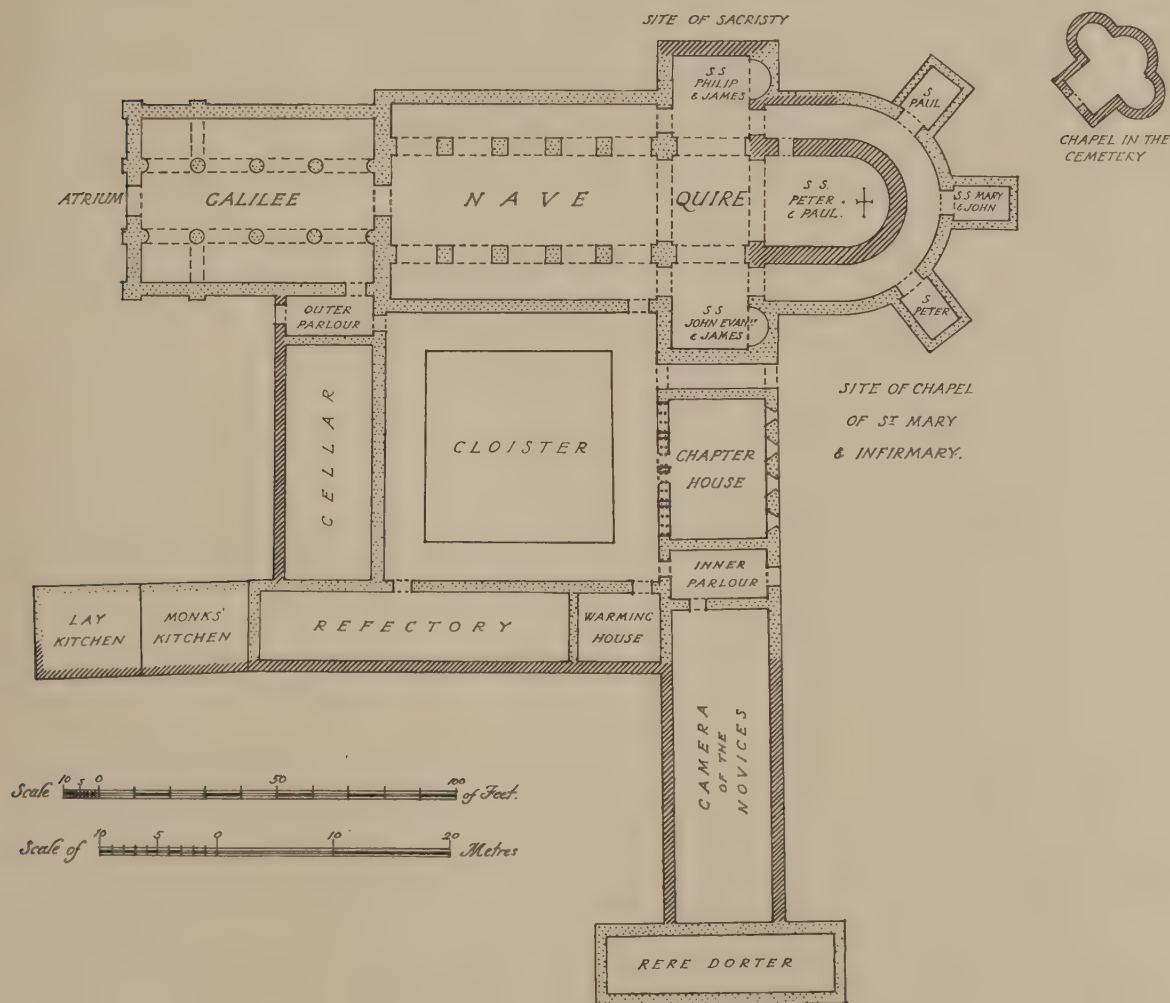


Fig. 2.

45 ft., making a total length of 103 ft. A sacristy of this size with a tower would be an unusual feature at this period, and one is tempted to suggest that here we have to deal with the first church divided up and put to other uses.

¹ *Consuetudines Monasticae*, i, 138, 164.

Some confirmation is given to this theory by the record¹ that Abbot Berno (d. 927) was buried behind the altar of St. Benedict, i.e. in this building.

The plan and appearance of the great third church at Cluny, begun in 1088 and surviving intact to the early years of the last century, is well known, but of the second church, which preceded it, although the information is fairly abundant, the essays at reconstruction have been few and singularly misguided. This second church, built by Abbot Majolus and consecrated in 981,² was not destroyed when its huge successor was built. As at Clairvaux, Pontigny, the Grande Chartreuse and elsewhere,³ a certain sanctity seems to have attached to the early cradle of the order, which preserved it from entire demolition down to the eighteenth century.

An account of the buildings at Cluny in 1623⁴ gives the following description of the remains of the second church then surviving: 'The chapel of St. Pierre le Vieil, at the end of the great dorter towards the church, wainscotted, vaulted, covered with tiles, having many windows mostly unglazed, 40 ft. long and wide, including the two aisles 52 ft.' 'The side of the cloister on the west is part occupied by a great building called the *Chambrière*, composed of various structures contrived in the walls and towers of the ancient church of St. Pierre.' The exact position of the chapel of St. Pierre le Vieux is shown on the late seventeenth-century plan of the abbey-buildings (pl. XL), preserved at Cluny,⁵ but by this time the remains of the towers had disappeared. From this plan it is evident that the second church, of which these vestiges formed a part, extended right across the site of the later medieval cloister and equally across that of the eighteenth-century cloister which still exists.

With this definite basis as a starting point it has been found possible, from various sources, to produce the accompanying plan of the early lay-out (fig. 2). The main authority for this reconstruction is the detailed description,⁶ with dimensions, of the buildings, preserved in the document known as the Customs of Farfa, and perhaps used as a guide to be followed in the laying-out of any new monastery of the order, just as, at an earlier period, the celebrated St. Gall plan was sent to the abbey of St. Gall.

¹ *Bibliotheca Cluniacensis*, p. 1631; cf. p. 8. The first church, which had long since disappeared, was twice wrongly identified with St. Pierre le Vieux by the grand prior of Cluny late in the fifteenth century, *ibid.*, p. 1633; his error puzzled Dom Martène and Dom Durand: 'La seconde [église] qu'on appelle St. Pierre le Vieux, où St. Aimart, et peut-être St. Bernon, sont enterrez, est dans le cloître', *Voyage Littéraire de deux religieux Bénédictins*, part I, 278 (1717).

² *Ante*, p. 145.

³ The Benedictines of St. Maur noted, at the cathedral of Maçon, that the sacristy was part of the early church and one of the most ancient that they had seen. *Voyage Littéraire* (1717), part I, 233.

⁴ *Millénaire de Cluny*, ii, 1910, p. 236.

⁵ *Ibid.*, ii, p. 231, and J. Virey, *L'Abbaye de Cluny*.

⁶ V. Mortet, *Recueil des Textes*, 1911, p. 135. Reprinted here as an appendix.

We will proceed to the examination of the various buildings in the order in which they occur in this document. The church is, here, only described as being 140 ft. long, 43 ft. high and with 160 glass windows; the Galilee was 65 ft. long, with two towers in front and with an atrium. The church is elsewhere¹ stated to have been arched, but whether this refers to a vault or only to the arcades is doubtful. There is definite reference to the aisles in Bernard's Customs² and another reference in Ulric's Customs³ to the columns of the nave. There are several references⁴ to the transepts (*membra*) each with a chapel dedicated respectively to St. John and St. Philip. The church also had crypts⁵ which, no doubt, lay beneath the presbytery. The route of the Sunday procession⁶ is of the greatest importance as providing some evidence of the form of the east end; it was as follows: after the sprinkling of the pavement round the high altar, it passed through an iron door, on the left (or north) of the altar, to the altar of St. Philip and St. James (north transept), thence to the three altars which are beyond the high altar, and so to the altar of St. John the Evangelist and St. James his brother (south transept); returning to the quire it left again by the altar of St. John, passing to St. Mary's church and the Infirmary.

The main feature of this description is the reference to the three altars beyond the high altar. On the face of it this statement seems to have its most normal and reasonable interpretation in an ambulatory with three radiating chapels, indeed it would be difficult, without citing unusual forms, to suggest any other arrangement which would meet the case.

This raises the extremely interesting question of the early planning of the east end in Burgundy. The earliest surviving church in the district is the great Benedictine abbey-church of Tournus⁷ (pl. xxxix and fig. 3), which has been the subject of prolonged controversy and on which no two French antiquaries seem to hold the same view. However this may be, there seems no reason to doubt that the extreme east end and the narthex retain the same form which they received in the latter part of the tenth century; the crypt under the presbytery was certainly finished in 979⁸ and the superstructure no doubt followed immediately after. This east end has an ambulatory and three

¹ Migne, *Patrologia Latina*, cxlv, 874.

² M. Herrgott, *Vetus Disciplina Monastica*, 311.

³ Migne, *op. cit.*, cxlix, 754. Lights for a procession were placed 'ad singulas columnas'.

⁴ Herrgott, *op. cit.*, p. 153. Migne, *op. cit.*, lib. iii, cap. xxii.

⁵ *Consuetudines Monasticae*, i, 144, cap. vii, 147.

⁶ Herrgott, *op. cit.*, 235.

⁷ J. Virey in *Bull. Mon.*, 1903, p. 515, and *Congrès Arch. de France, Dijon*, 1929, p. 368; C. Oursel, *L'Art Roman de Bourgogne*, 1928, p. 32.

⁸ Falcon, *Chron. Trenorchienne*, cap. xl, in Poupardin, *Monuments de l'histoire des Abbayes de St. Philibert*, pp. xliv, 99.

radiating chapels all with square ends, a type which stands alone in Burgundy, but which may well have been derived from that of the cathedral of Clermont-Ferrand¹ consecrated in 946, which had an ambulatory with four radiating

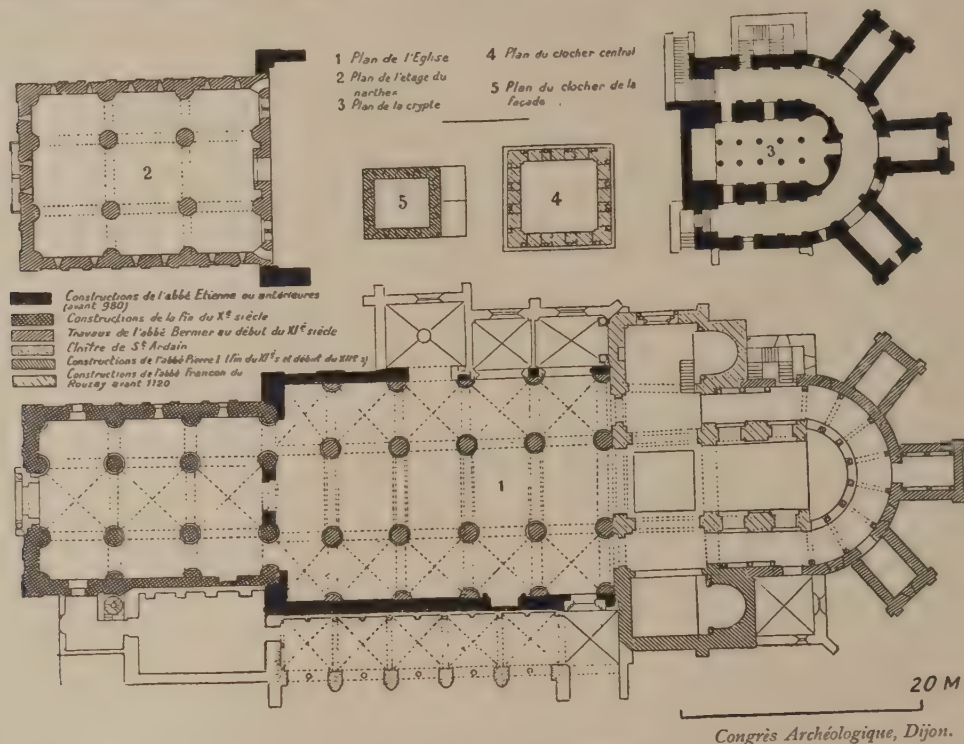


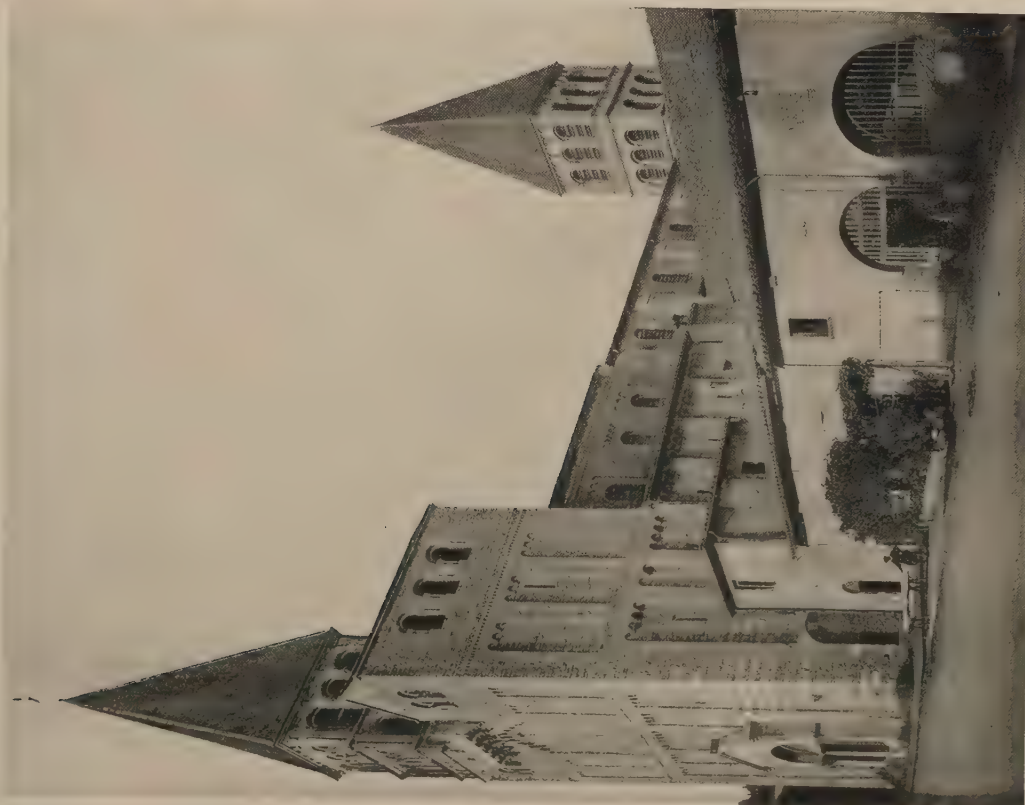
Fig. 3. Tournus Abbey, Burgundy.

chapels, two of which at any rate had square ends. The rest of the second church at Cluny, with its crypt, narthex, and towers, bears so close a resemblance to that at Tournus that I have ventured to show the three chapels at Cluny of the same form as those at Tournus, though, of course, they may equally well have been apsidal. It is a nice point as to whether Tournus was inspired by Cluny or Cluny by Tournus, for, as we have seen, the church at Cluny was consecrated in 981, whereas the crypt at Tournus was completed only two years before; it would thus seem that Cluny won by a narrow margin.

As this theory of the form of the east end of Cluny has not before been put forward, it may be as well to note briefly alternative theories which have previously been discussed. The first of these,² put forward by certain German

¹ H. du Ranquet, *La Cathédrale de Clermont-Ferrand*, p. 33, and in *Bull. Mon.*, 1909, p. 311.

² J. Schlosser, *Die Abendländische Klosteranlage des Früheren Mittelalters*, p. 51, fig. 2 (1889).



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Fig. 1. Tournus Abbey, from the SW.



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Fig. 2. Cluny Abbey, S. Transept, looking SE.



archaeologists, suggests that the second church of Hirsau (fig. 4) reproduces the second church at Cluny, while M. Vallery-Radot¹ has recently suggested

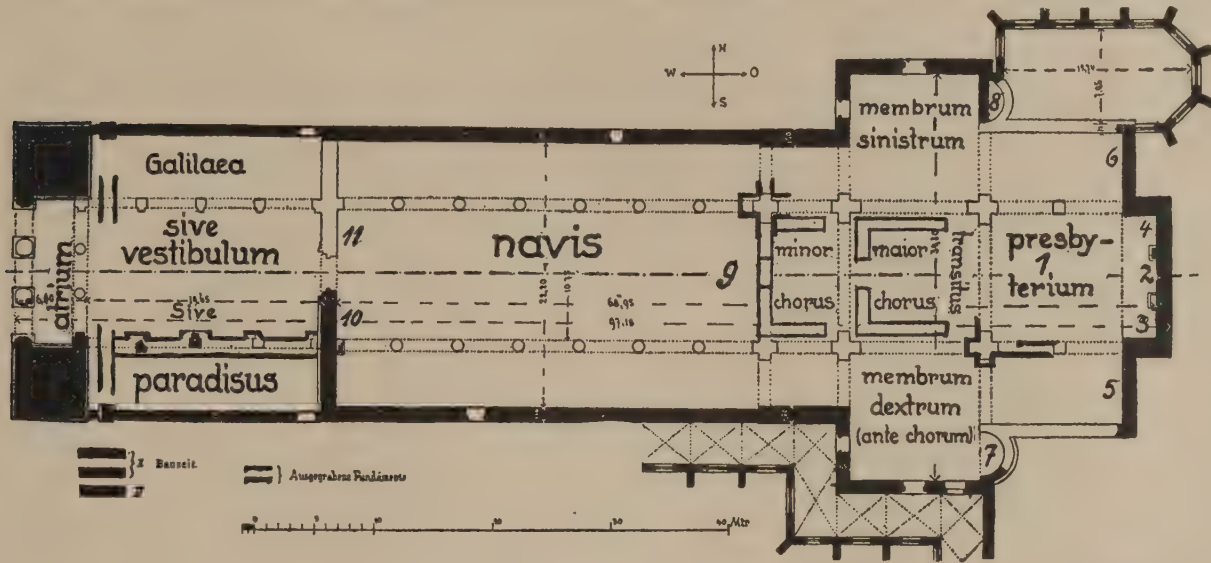


Fig. 4. Hirsau Abbey, Würtemberg.

After Mettler

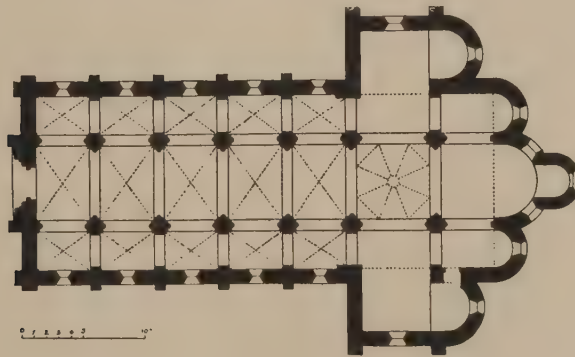


Fig. 5. Anzay-le-Duc Priory, Burgundy.

Anzay-le-Duc (fig. 5) and Charlieu as reproducing the form of the same original. The first of these theories may be at once rejected, as we now know definitely, from the seventeenth-century plan, that Cluny was apsidal, whereas Hirsau² (1082-91) and its copy at Schaffhausen³ (1104) were square-ended. The second

G. Hager, 'Zur Geschichte des abendländischen Klosteranlage Plan' in *Zeitschrift für Christliche Kunst*, 1901, p. 170.

¹ J. Vallery-Radot in *Bull. Mon.*, 1929, p. 243.

² A. Mettler, *Kloster Hirsau*, 1928.

³ J. Hecht, *Der Romanische Kirchenbau des Bodenseegebietes*, 1928, p. 293 and pl. 199.

theory must equally be rejected owing to the difficulty of applying the recorded route of the Sunday procession to such a plan.

A slight difficulty in the theory suggested in this paper should perhaps be mentioned; it consists in the absence of any remains of the ambulatory in the seventeenth-century plan, but there is equally no trace of the three chapels 'beyond the high altar', which certainly existed, and we can only suppose that both ambulatory and chapels were destroyed before the date of the plan. The high altar in the Cluny church was dedicated to SS. Peter and Paul, and those of the three chapels to St. Paul, St. Mary and St. John the Evangelist, and St. Peter respectively.¹ In the sacristy was an altar of St. Benedict, and this building (which we have identified with part of the first church) was approached from the north transept.

Let us now turn to the narthex with its two towers. There can be no doubt that this started a fashion which was widely followed, not only within the order of Cluny but in other churches of Burgundy and the adjoining provinces. The narthex with its two towers still exists at Tournus, Paray-le-Monial,² Vézelay,³ Hirsau and Romainmoutier,⁴ and the narthex with or without towers has left remains at Souvigny;⁵ the arrangement was, furthermore, reproduced in its entirety in the great third church at Cluny. The length of this adjunct varies greatly, though the lengths of the early narthex at Cluny and that at Tournus were very similar.

The atrium at Cluny was either the space between the two towers, if they stood in advance of the narthex, as at Hirsau and the third church at Cluny, or the space in front of the narthex, if the towers stood within it, as at Tournus, and as we have shown them on the plan. In this case it may or may not have formed an enclosed courtyard after the Carolingian and early Christian tradition.

The general dimensions of the early monastic buildings at Cluny are preserved in the 'Farfa' customs, together with a general indication of their arrangement, as the description is evidently based on a tour of the cloister. The relative arrangement is also preserved in the order of the tour of the claustral prior and others in the various Cluny customs.

The cloister itself was very small, only 75 ft. square, a dimension preserved in the 'Farfa' customs as the distance between the door of the church and that of the warming-house; it is also the approximate length of the nave of the church, as results from the setting out of the plan. This dimension may be

¹ Herrgott, *Vetus Disciplina Monastica*, 229, 230.

² J. Virey, *Paray-le-Monial*, 1926.

³ C. Porée, *L'Abbaye de Vézelay*.

⁴ A. Naef in *Bull. Mon.*, lxx (1906), p. 425.

⁵ F. Deshoulières, *Souvigny et Bourbon-l'Archambault*.

compared with that of the cloister at Tournus (early eleventh century), 90 ft., and that at St. Augustine's, Canterbury¹ (tenth century), 68 ft.

On the east side of the cloister lay the chapter-house, (inner) parlour and camera (of the novices), with the great dorter above them. The chapter-house



Fig. 6. Charlieu Priory, Burgundy. Chapter-house Entrance.

was 45 ft. by 34 ft.; the latter dimension being also the width of the dorter, it follows that the longer dimension was from north to south within the range. The chapter-house had four windows in the east wall, three in the north, and twelve galleries (*balcones*) in the west wall, each with two columns. These galleries were evidently a double arcade, such as still exists in the rather later example in the Cluniac priory of Charlieu² (fig. 6). Beyond the inner parlour was a long apartment (90 ft. long), simply called the camera, but corresponding in position to the novices' room in the tour of the claustral prior.³ Over the whole range extended the dorter (160 ft. by 34 ft.), lit by ninety-seven glass windows and with a rere-dorter (70 ft. long) at the end. The latter had forty-five divisions, each with a window and a timber clerestory with seventeen windows.

The south range of the cloister included the warming-house and the frater, with the monks' and lay kitchens, beyond, but in the same range. The position of the warming-house, in this, and not in the east range, is settled by its width, 25 ft., the same as that of the frater. The frater itself was 90 ft. long and must

¹ *Archaeological Journal*, lxxxvi, pl. xii, p. 278.

² J. Virey, *Paray-le-Monial*, p. 96.

³ Herrgott, *Vetus Disciplina Monastica*, 143.

have extended well to the west of the cloister; it had eight windows on each side.

The western range was occupied by the cellar and the outer parlour; the former was 70 ft. long and is given (in the 'Farfa' customs) the excessive width of 60 ft. This must have included a yard to the west, if indeed it is not a mistake; the building is shown on the plan with a normal width of 30 ft. To the north of it was the outer parlour, not mentioned in the 'Farfa' customs but referred to, in this position, in the tour of the claustral prior.¹ In it must have been the doorway, referred to in the 'Farfa' customs² as being between the Galilee and the cloister, also 'the doorway by which one enters the cloister from the outside', mentioned in the Customs of Bernard.³ The almonry, described as of the same width as the cellar, was probably above it.

The sacristy, as we have said, was 58 ft. long, with a tower at its head; adjoining it at the west was a building, assigned to the tailors, 45 ft. long by 30 ft. wide; between these two buildings and the nave and narthex of the church was the lay cemetery. It has been suggested above that these buildings were perhaps the first church, which would thus have had a length of 103 ft.

In front of the Galilee was the guest-house, 135 ft. long, with beds for forty men and thirty women, each with its garde-robe; in the middle of the building were tables for meals.

The infirmary, which lay, like its successor, to the east of the cloister, is lengthily described, but its arrangement is nevertheless by no means clear. The most likely explanation seems to be that the six apartments, of which it was composed, were grouped round a small cloister, as at St. Gall and as indicated in Paul the Deacon's Commentary on the Rule of St. Benedict,⁴ with the infirmary-chapel of St. Mary, 40 ft. long by 20 ft. wide on the north or south side. The chapel of St. Mary, as shown on the late seventeenth-century plan of the abbey, has a central apse of narrower span than the side apses; this may indicate that an earlier central apse was retained when the building was enlarged in 1085.

The remaining buildings of the 'Farfa' account need not be particularized as it is quite impossible to lay them down on plan with any secure result.

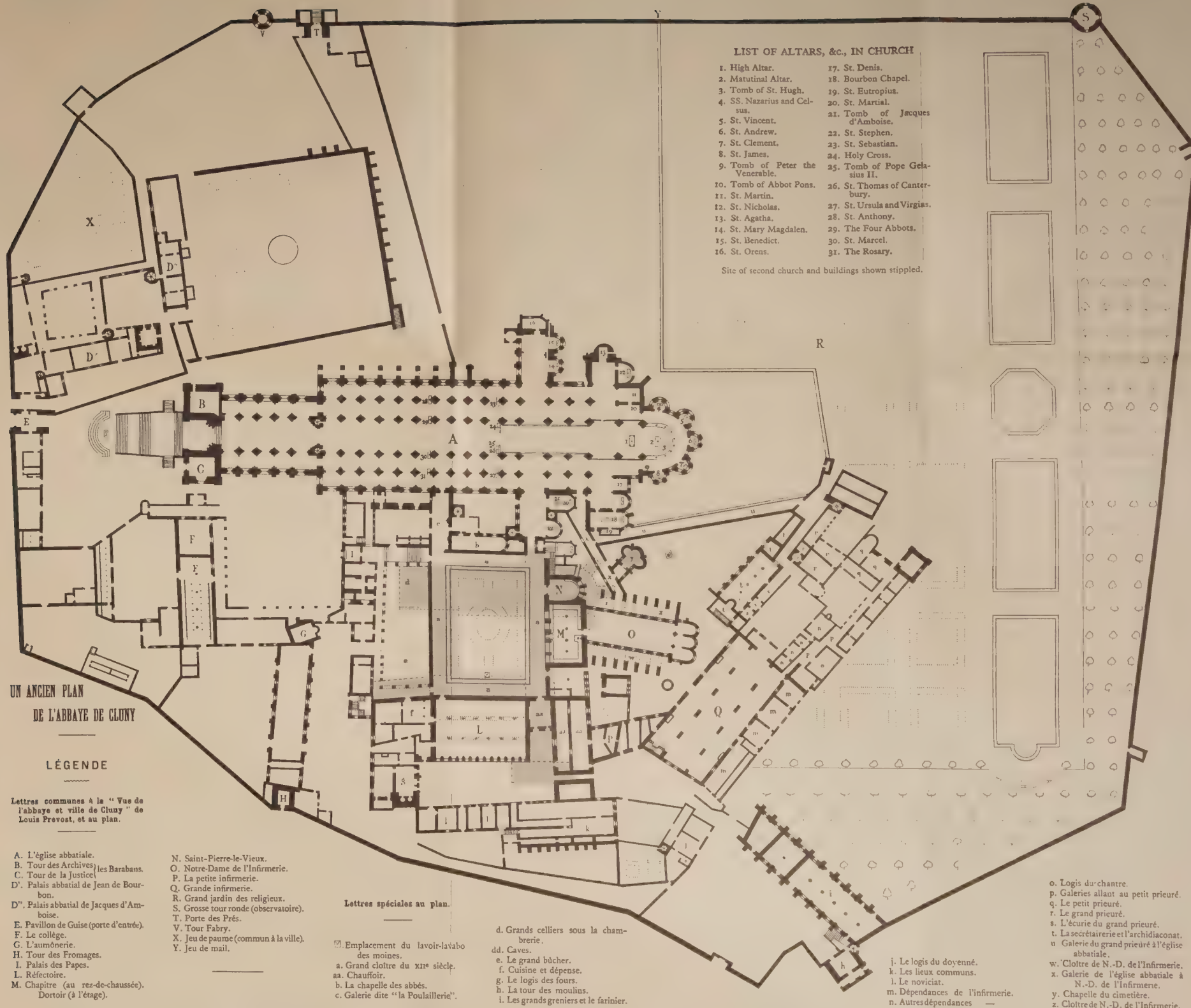
The monastic buildings, shown on the accompanying plan, were drawn out from the dimensions of the 'Farfa' customs, anchored to the one fixed point of the position of the east extremity of the church of St. Pierre le Vieux. The plan, thus drawn out, when applied to the late seventeenth-century plan of the

¹ Herrgott, *Vetus Disciplina Monastica*, 141.

² *Consuetudines Monasticae*, i, 176.

³ Herrgott, *op. cit.*, 143.

⁴ *Florilegium Cassinense*, p. 121; cf. *Expositio Regule ab Hildemaro tradita*, ed. R. Mittermüller (1880), p. 406.



Plan of the abbey buildings at Cluny; after *Millénaire de Cluny*, by permission of the Académie de Mâcon, with additions from Mabillon, *Annales Ordinis S. Benedicti*, v.

medieval building, at once demonstrates the fact that in the twelfth-century reconstruction of the monastic buildings much of the earlier lay-out was suffered to survive. Thus the medieval cloister included exactly the east, south and west ranges of the earlier building, the east wall of the early dorter-range, the south wall of the frater-range and the west wall of the cellar-range becoming the enclosing walls, in those directions, of the later cloister. The north wall of the later cloister lined, very nearly, with the north end of the transept of the early church, but not exactly, and the 'palimpsest' of the early transept-end can be seen recessed slightly in the north wall of this later cloister. The projecting part of the early dorter was apparently preserved in its entirety, as the east wall of the later frater and the opposite wall of the later dorter. Finally the south wall of the early kitchens was preserved, to the west of the cloister.

This extraordinary measure of agreement, between the plan set out from the 'Farfa' measurements and the lines of the medieval lay-out, preserved in the seventeenth-century plan (pl. XL), is, I think, the best evidence of the substantial accuracy of the reconstruction. I can only hope that the future excavations of Professor K. Conant of Harvard, on the site, will not only confirm this reconstruction but also bring to light substantial evidence of the structure and ornament of the early buildings.

APPENDIX I

V. Mortet. *Recueil de Textes* (1911) p. 133. Customs of Farfa, [de positione seu mensuratione officinarum].

Ecclesia longitudinis cXL pedes habeat, altitudinis XL et tres; fenestrae vitreae CLX—Capitulum vero XL et v pedes longitudinis, latitudinis xxx et quatuor.—Ad orientem fenestrae IIII, contra septentrionem tres.—Contra occidentem XII balcones, et per unumquemque duae columnae affixae in eis.—Auditorium xxx pedes longitudinis; camera vero nonaginta pedes longitudinis.—Dormitorium longitudinis CLX pedes, latitudinis xxx et IIII; omnes vero fenestrae vitreae quae in eo sunt xc et septem, et omnes habent in altitudine staturam hominis, quantum se potest extendere usque ad summitatem digiti, latitudinis vero pedes II et semissem unum; altitudinis murorum xx et tres pedes.—Latrina lxx pedes longitudinis, latitudinis xx et tres; sellae XL et quinque in ipsa domo ordinatae sunt, et per unamquamque sellam aptata est fenestrula in muro altitudinis pedes II, latitudinis semissem unum, et super ipsas sellulas compositas struem lignorum, et super ipsam constructionem lignorum factae sunt fenestrae x et VII, altitudinis tres pedes, latitudinis pedem et semissem.—Calefactorium xx et v pedes latitudinis, eademque mensura longitudinis; a janua ecclesiae usque ad ostium calefactorii

¹ Professor Conant has kindly supplied me with a plan of the foundations discovered by him in 1929 within the area of the existing cloister. They would appear to lie below the lines of the arcades of the nave of the second church.

pedes LXXV.—Refectorium longitudinis pedes LXXXX, latitudinis XXV; altitudinis murorum XXIII; fenestrae vitreae, quae in eo sunt, ex utraque parte octo, et omnes habent altitudinis pedes V, latitudinis tres.—Coquina regularis XXX pedes longitudine et latitudine XX et V; coquina laicorum, eademque mensura.—Cellarii vero longitudo LXX, latitudo LX pedes.

Elemosynarium quippe cella pedes latitudinis X, longitudinis LX, ad similitudinem latitudinis cellarii.—Galilea longitudinis LX et quinque pedes, et duae turres sint in ipsius galileae fronte constitutae; et subter ipsas atrium est ubi laici stant, ut non impediunt processionem.—A porta meridiana usque ad portam aquilionariam pedes CCLXXX.—Sacristia pedes longitudinis L et VIII cum turre, quae in capite ejus constituta est.—Oratorium Sanctae Mariae longitudinis XL et quinque pedes, latitudinis XX; murorum altitudinis XX et III.—[Infirmis sex cellulae deputatae sunt.] Prima cellula infirmorum latitudinem XX et VII pedes, longitudinem XXIII [habet] cum lectis octo et [c]ellulis totidem, in porticu juxta murum ipsius cellulae deforis et claustr[u]ra praedictae cellulae habet latitudinis pedes XII. Secunda cellula similiter per omnia est coaptata. Tertia eodemque modo. Similiter etiam et quarta. Quinta sit minor, ubi convenient infirmi ad lavandum pedes diebus sabbatorum, vel illi fratres qui exuti sunt ad mutandum. Sexta cellula praeparata sit ubi famuli servientes illis lavent scutellulas et omnia utensilia.—Juxta galilaeam constructum debet esse palatium longitudinis CXXX et V pedum, ad recipiendum omnes supervenientes homines, qui cum equitibus adventaverint monasterio. Ex una parte ipsius domus sint praeparati XL lecti et totidem pulvilli ex pallio ubi requiescant viri tantum, cum latrinis XL. Ex alia namque parte ordinati sint lectuli XXX ubi comitissae vel aliae honestae mulieres pausent, cum latrinis XXX, ubi solae ipsae suas indigencias procurent. In medio autem ipsius palatii affixae sint mensae, sicuti refectorii tabulae, ubi edant tam viri quam mulieres.

In festivitibus magnis sit ipsa domus adornata cum cortinis et palliis et bancalibus in sedilibus ipsorum. In fronte ipsius sit alia domus longitudinis ped. XLV, latitudinis XXX. Nam ipsius longitudo pertingat usque ad sacristiam, et ibi sedeant omnes sartores atque sutores ad suendum quod camerarius eis praecipit; et ut praeparatam habeant ibi tabulam longitudinis XXX ped. et alia tabula affixa sit cum ea, quarum latitudo ambarum tabularum habeat VII pedes. Nam inter istam mansionem et sacristiam atque aecclesiam nec non et galilaeam sit cimiterium, ubi laici sepeliantur. A porta meridiana usque ad portam septentrionalem contra occidentem sit constructa domus longitudinis CCLXXX. ped., latitudinis XXV; et ibi construantur stabulae equorum per mansiunculas partitas, et desuper sit solarium ubi famuli edant atque dormiant, et mensas habeant ibi ordinatas longitudinis LXXX ped., latitudinis vero IV. Et quotquot ex adventantibus non possunt reficere ad illam mansionem quam superius diximus, reficiant ad istam. Et in capite ipsius mansionis sit locus aptitatus ubi convenient omnes illi homines qui absque equitibus deveniunt, et caritatem ex cibo et potu, in quantum convenientia fuerit, ibi recipiant ab elemosynario fratre. Extra refectarium namque fratrum, LX pedum in capite latrinae sint cryptae duodecim, et totidem dolii praeparati ubi temporibus constitutis balnea fratribus praeparentur. Et post istam positionem construatur cella novitiorum, et sit angulata in quadrimodis, videlicet in prima ut meditentur, in secunda reficiant, in tertia dormiant, in quarta latrina ex latere. Juxta istam sit disposita alia

cella, ubi aurifices vel inclusores seu vitrei magistri conveniant ad faciendam ipsam artem. Inter cryptas et cellas novitiorum atque aurificum habeant domum longitudinis cxxv ped., latitudinis vero xxv, et ejus longitudo perveniat usque ad pistrinum. Ipsum namque in longitudine, cum turre quae in capite ejus constructa est, Lxx ped., latitudinis xx.

APPENDIX II

The burial places of the Abbots of Cluny from Berno to Godfroi d'Amboise.¹

BERNO (d. 13 Jan., 927). At Cluny, in the church.² In the old church of St. Peter, behind the altar of St. Benedict, which is now said by some monks to be the altar of St. Catherine.

ODO (d. 944). In the Church of the monastery of St. Julian at Tours.

AYMARD (d. 953). In the aforesaid old church (of St. Peter), behind the altar of St. Mary.

MAJOLUS (d. 994). In the church of the Cluniac priory of Souvigny (dep. Allier).

ODILO (d. 1049). In the church of the Cluniac priory of Souvigny.

HUGH (d. 1109). In the church which he began from the foundations.³ He was buried in the greater church which he built in honour of St. Peter and St. Paul, behind the morrow-mass altar; after some time his body was removed and placed above the high altar.⁴ [St. Hugh was canonized by Pope Calixtus II when at Cluny in 1119.]

PONS (resigned 1122, d. in Rome, 10 Jan., 1126). In the church at Cluny.⁵

HUGH II (d. 1122). In the northern part of the ambulatory (*periboli*),⁶ next the altar of SS. Nazarius and Celsus.

PETER THE VENERABLE (d. 1157). Next the altar of St. James and behind the cupboard of the relics of the shrine of All Saints, next the door which gives access to the back of the choir on the right.

HUGH III (deposed 1163?). In the Cluniac priory of Ste Marie de Vaux, near Poligny (dep. Jura).

STEPHEN OF BOULOGNE (deposed 1173).

RALPH DE SULLY (resigned 1176). In the Cluniac priory of la Charité-sur-Loire (dep. Nièvre).

WALTER I de Châtillon (d. 1176). At Cluny, in front of the chapel of St. Martial.

WILLIAM I (d. 1179). At La Charité-sur-Loire.

THEOBALD I de Vermandois (d. 1180). In Rome.

HUGH IV (d. 1199). At Cluny, between the altars of St. Andrew and St. Vincent.

HUGH V (d. 1207). At Cluny, below Abbot Pons.

WILLIAM II of Alsace (d. 1222). At Gaye (dep. Marne), a possession of Cluny.

GERALD I of Flanders, promoted bishop of Valence 1220, afterwards patriarch of Jerusalem 1230 (d. 1239). Next the sepulchre of our Lord at Jerusalem.

ROLAND I (resigned 1228). At Cluny, in the chapter house.

¹ The list is based on the chronicle compiled by the grand prior of Cluny late in the fifteenth century, *Bibliotheca Cluniacensis*, pp. 1627-86; cf. *ante*, 156, 157, 168 note 1.

² *Bibliotheca Cluniacensis*, 12. For burials of bishops and abbots in churches from the ninth century, cf. F. W. Muncey, *A History of the Consecration of Churches and Churchyards*, 120-2.

³ Orderic Vitalis, *Historia Ecclesiastica*, ed. Le Prevost, iv, 298.

⁴ *Bibliotheca Cluniacensis*, 1643.

⁵ Orderic Vitalis, *op. cit.*, iv, 299, 427.

⁶ *Ibid.*, iv, 298.

BARTHOLOMEW I de Floranges (d. 1230). At Cluny, behind the choir, 'juxta pilare quod sustinebat coronam stantem in medio chori a parte sinistra.'

STEPHEN II (resigned 1235). At Souvigny.

HUGH VI de Courtenay, promoted bishop of Langres 1244 (d. 1247). At Damietta, in Egypt.

WILLIAM III, promoted bishop of Olena¹ 1257 (d. 1263). In the church of the Cluniac priory of St. Martin des Champs, Paris.

YVO I de Vergy (d. 1275). At Cluny, between the altars of St. James and St. Clement.

YVO II de Chassant (d. 1289). At Cluny, between the altars of St. Andrew and St. Clement.

WILLIAM IV (d. 1295). At Cluny, in the chapter house next to Abbot Roland.

BERTRAND I de Colombier (d. 1308). At Cluny, between the altars of St. Vincent and SS. Nazarius and Celsus.

HENRY I de Fautrières, promoted bishop of St. Flour 1319 (d. 1320). At St. Flour (dep. Cantal).

RAYMOND I de Bonne (d. 1322). In the cathedral church of Notre Dame des Doms, Avignon.

PETER II de Chastelus, promoted bishop of Valence 1342 (d. 1344). At Cluny, in the chapel of St. Martial, which was built during his rule.

YTIER DE MIRMANDE (d. 1347). In Notre Dame des Doms, Avignon.

HUGH VII de Fabry (resigned 1351). In the Chartreuse of Val Ste Marie (dep. Drôme).

ANDROIN I de la Roche, promoted Cardinal 1361 (died at Viterbo). At Cluny, on the direct way through the chapel of St. Denis by which the monks go to the choir.

SIMON I de la Brosse (d. 1369). In the college of the monks of Cluny in Paris.

JEAN I du Pin (d. 1374). In St. Martin des Champs, Paris.

JACQUES I du Dumas-Cozan (d. 1383). In the church of the college of St. Martial at Avignon (consecrated during his rule), before the altar of St. Mary, next the door of the library of the university.

JEAN II (d. 1400). At Cluny, next the entrance by which the abbot goes into the choir for high mass.

RAYMOND DE CADOUIN (d. 1416). At Cluny, next the chapel of St. Denis on the high altar side.

ROBERT DE CHAUDESOLLES (d. 1423). Next his predecessor, Raymond.

ODO II de la Perrière (d. 1455). At Cluny, before the altar of St. Benedict.

JEAN III de Bourbon (d. 1485). At Cluny, before the high altar in the Bourbon chapel, which he built from the foundations (where before there was a small chapel of St. Eutropius).

JACQUES II d'Amboise, promoted bishop of Poitiers 1510 (d. 1516). At Cluny, in the chapel of St. Martial.

GODFROI D'AMBOISE (d. 1518). At Cluny, in the chapel of St. Martial.

¹ Gams, *Series Episcoporum*, 431; W. Miller, *The Latins in the Levant*, 52.

VII.—*The Chambered Cairn of Bryn Celli Ddu.* By W. J. HEMP, Esq., F.S.A.

Read 27th March 1930

THE monument to be described lies in the parish of Llanddaniel Fab in Anglesey, the latitude being $53^{\circ} 12' 26''$, and the longitude $4^{\circ} 14' 6''$. It is a large circular single-chambered cairn, originally about 160 ft. in diameter, and at least 12 to 14 ft. high.¹ The site is at the end of a low ridge of glacial moraine 500 ft. from a small stream known as the Braint, a mile distant from the Menai Straits and 100 ft. above sea-level. Closely adjoining the cairn is the base of a second (see p. 212).

Bryn Celli Ddu was formerly called Llwyn Llwyd, and the monuments were first described and illustrated early in the eighteenth century by a clergyman who lived in the immediate neighbourhood, the Rev. Henry Rowlands of Plas Gwyn, the author of *Mona Antiqua*. All credit should be given him as a pioneer in the study of the prehistoric monuments of his county, and for his careful efforts to record them, but unfortunately he was convinced that they were attributable to the Druids, and his theories have misled generations of his fellow countrymen and others.

The drawings with which he illustrated his book are almost as wild as his theories, but he does record some important features about the Bryn Celli Ddu monuments; that one cairn was 'somewhat broke and pitted into on one side, where the Stones had been carry'd away', and that its fellow had been almost destroyed to make walls and hedges, and that there were 'two standing Columns erected between them'.²

Half a century later Henry Penruddocke Wyndham made a tour in North Wales, visiting Anglesey in the summer of 1777. In the published account of his travels³ the following sentences occur:

'in the beginning of November 1777, was accidentally discovered, at the hamlet of Brynkelly, a subterraneous gallery, eighteen feet in length, three in breadth, and six in height. This led to a chamber, of the same height, which was covered with a large single stone, twelve feet long and nine wide. A small round pillar seemed to afford some support to this stone from the centre of the room: Many human bones were found dispersed over the floor, but they immediately mouldered into dust upon being touched.'

¹ Probably much more. La Hougue Bie, with a diameter of about 200 ft., now has a height of 40 ft., and was probably at least 10 ft. higher; and New Grange has a diameter of about 300 ft. and a height of about 45 ft.

² Henry Rowlands, *Mona Antiqua Restaurata*, 1723, p. 93 and Plate vii, figs. 3, 4.

³ H. P. Wyndham, *A Tour through Monmouthshire and Wales*, 2nd edition, 1781, p. 139.

Here there is a contemporary record of the opening of the cairn and of the discovery that it contained 'many human bones' not cremated. A number of other references to the monument have been summarized by Mr. Neil Baynes in his valuable paper on 'The Megalithic Remains of Anglesey', published in the *Transactions of the Hon. Soc. of Cymmrodorion for 1910-11*. The various accounts quoted there do not always agree, but it is stated that in the chamber there was 'along the sides of the room . . . a stone bench' on which were found human bones which crumbled at the touch,¹ and that labourers 'when digging towards the center' of the lesser cairn 'discovered a flat pan, about 10 ins., overturned bottom upwards and under it a wedge of gold, as they pretend, the size of the heater of an iron, with a piece of wire passing through the smaller end of it'.²

Miss V. C. C. Collum very kindly supplies the following extracts from a MS. album, preserved in the Lukis Museum, Guernsey, entitled 'Unchambered and Chambered Barrows', and containing letters from Capt. F. D. Lukis to his father, the Rev. W. C. Lukis, which describe his excavations in the cairn. Capt. Lukis's discoveries are also summarized in a paper in *Archaeologia Cambrensis* by the Rev. E. L. Barnwell in 1869.

30 Oct. 1865. To-day I found a most interesting [cromlech] called 'Bryn Celli Ddu'. It is exactly like the Carnac ones in shape. We could not stop to plan and sketch it today, for it rained all the time like mad, so we have put it off until we can get a fine day, so as to spend some hours about it and do it correctly. It still has the heap of stones and earth over it, and is really the most interesting place I have seen in this country. It is exactly like the Brittany ones in form only smaller a little in size. Nearly in the centre of the square chamber is an upright pillar rubbed and flattened at the top, so as to fit under the capstone. The purpose for which it was so placed is not clear, but I seem to recollect similar pillars in some of the cromlechs at Carnac. I shall try and obtain permission to grub out the interior and discover something of interest. I have not yet heard that even bones have ever been found in any of these structures.

5 Nov. 1865. The whole structure is surrounded by a wall which protects it from mutilation. Young trees have been planted round it, and the whole is well protected. It is on a gentle eminence and the cairn has been very much levelled up to the base of the wall, so that it looks like a flattened hill top. Two or three stones appear to be protruding through the turf on the outside of the wall, which may be portions of the outer circle, or the natural rock. On the N. side, the ground is full of small pits, as if stones had been removed from that side, but now overgrown with rich grass.

The pillar in the large chamber I do not think was placed there to support the capstones. It is a nicely rounded pillar, and almost polished on the surface. If it had been so placed to assist in supporting the caps it would I presume have been placed in the centre of the chamber, and not on the N. side. Both the cap-stones (one of which

¹ T. Pennant, *A Tour in Wales*, 1784, ii, p. 262.

² J. Skinner, *Ten Days' Tour through the Island of Anglesey*, Arch. Camb. Supplement, 1908, p. 25.

THE CHAMBERED CAIRN OF BRYN CELLI DDU 181

now lies on the outside) are in perfect condition, with no crack or sign of splitting about them.

17 Nov. 1865. I have obtained leave to dig at Bryn Celli Ddu and commenced at the base of the pillar, but I began so late in the afternoon I had not time to do much. However, I got to 9 ft. of it, and circumference in its thickest part (for it tapers gently towards the upper end) about 5 ft. I found shingle, ashes, and burnt human bones.

I have leave to pull the place down if I like, so will go there again as soon as I can. I would have gone to-day but for the rain. I should have got a man to help me to dig out the whole structure, for it is decidedly an interesting place, and those pillars¹ are a new feature to me. They are not placed like the one in Déhus for the purpose of supporting a broken cap, but are entirely independent of the structure. It is fashioned round like a pillar, and almost polished on the surface, and looks like a long stone bolster stuck up on end. It is only surprising to me that people—these Cambrian folks—have not noticed it.

The farmer, on whose land it is, told me that seven² years ago the tumulus over it was about 12 or 14 ft. high, and diameter from 70 to 80 ft., with big stones round the hill. For the purpose of levelling the field they removed it.³

19 Nov. 1865. I was there yesterday and dug hard with but little success. I found more bones, a small piece of lead . . . and a portion of a flint instrument thus: [a fragment of a triangular arrow or javelin head, see p. 182].

I also found several limpet shells and v. old looking fellows, exactly resembling those in Déhus in appearance. After removing about a foot in depth of yellow soil I came to a few flat slabs of stone lying round the base of the pillar; and immediately underneath these slabs is a thick bed of small shingle. I dug down about 18 in. and found that the base of the pillar cuts through the bed, but finding nothing, I then began another hole in the angle formed by the two props towards which the pillar points.⁴ From what I noticed I think the props stand in a bed of about 2 ft. in thickness, of shingle. It is v. hard indeed, but now and then you come to soft, loose places, as if water had filtered through the stones.

My digging moved the pillar a little. It was more upright, but it sunk several inches after I had dug about it.

24 Nov. 1865. You ask if Yr Ogof has ever been explored? I know not, but certainly it must have been dug into at some time or other, for you can now stand upright in the western chamber and can crawl through the avenue.

26 Nov. 1865. I begin to think the large pillar had some religious significance. They would not have taken the trouble to shape it so well as a mere support. . . . The top nearest the capstones was evidently flattened for a purpose. Some of the bones I think are unburnt. They are all in small fragments. The examination I made by digging was done too hurriedly.

¹ Capt. Lukis considered that stone 17, then barely visible, was a second pillar.

² Probably seventeen, see p. 182.

³ Presumably the 'big stones' were those of circle 2, and this the occasion of their mutilation.

⁴ Stones 4 and 6.

In 1875 the Lukis Collection passed to the British Museum; it included 'a piece of red colouring matter', a fragment of pottery, limpet shells, a strip of lead and the broken flint (see letter of 19 November). The lead is undoubtedly modern, the 'pottery' is a natural concretion, while the 'colouring matter' is red jasper, which is frequently found on the site.

The 'young trees' of 1865 had been planted about 1847 when the chamber and passage were protected by being surrounded by a wall, but in 1911 Mr. Neil Baynes drew attention to 'the trees which had been planted close to the dolmen and had become a source of danger as the roots had doubtless grown round some of the stones and in a strong wind might cause them to move from their positions'.¹

He concluded his account with the following words: 'This is perhaps the finest monument of its kind in Great Britain, and it is earnestly to be hoped that Lord Anglesey will hand it over to the care of the Commissioners [of Works].'

Mr. Baynes's suggestion was carried out by the present Marquess in 1923, after an examination of the monument had proved that the remaining cover-stone, having been displaced and slightly tilted, only overlapped the most westerly upright (3), which carried the greater part of its weight, by about half an inch, and this at one point only. Moreover, the concentrated pressure here had already resulted in the splitting off of the western angle of the stone. The eastern angle had also disappeared, probably from a similar cause. The general result was that not only was the cover-stone itself being subjected to severe internal strain owing to its displacement, but it was also exerting a lateral pressure on the uprights.

The first steps taken by H. M. Office of Works in September, 1925, were the removal of the modern wall which closely surrounded the stones and the felling of the trees. Their roots were a most serious obstacle to the continuation of the work; so long as they retained any life it was impossible to examine in detail any part of the soil they had penetrated, as their removal would almost inevitably disturb any stratification, and would be likely to displace or loosen the smaller stones used for walling. In the event it was nearly three years before some of them could be removed with safety.

Up to 1925 the only visible remains of the structure were the base of the mound, together with the chamber and the inner 15 ft. of the passage. The passage, however, was filled with earth, and so overgrown and surrounded by trees as to be unrecognizable, while the chamber was in little better state.

The plan of the monument as eventually revealed (fig. 1) shows that when complete it had consisted of a mound of stones and soil 160 ft. in circumference,

¹ *Trans. Hon. Soc. Cymmrodorion, 1910-11, p. 20.*

covering a single polygonal chamber about 8 ft. in diameter, roofed by two cover-stones, and approached by a passage 26 ft. long, of which the inner 20 ft. were roofed by four stones. The chamber was placed within, but not at the centre of a roughly circular area, which was surrounded by four concentric circles of stones. Three of these circles were completely hidden under the cairn, two of them being buried in a ditch, the third stood free of the ditch in the inner area, while the fourth ringed the base of the cairn.

The Chamber and the Passage approaching it may be divided into four parts, which it will be convenient to consider separately: (i) the Chamber itself (contained by stones 2 to 7), (ii) the Inner Passage (stones 8-17), (iii) the Portal (stones 18-21), and (iv) the Outer Passage (stones 22-6).

Sections i, ii, and iii were roofed by large slabs of stone, or boulders having one flat side, all of which remain in a more or less perfect condition, except the single cover of the portal which has disappeared. Section iv was never covered.

It should be stated that throughout the description of the monument it has been assumed for the sake of simplicity that the axis is E. and W. instead of approximately ENE. and WSW.

THE PILLAR STONE

Attention was first directed to the chamber (pl. xli, fig. 1), and the first part of the structure to be examined was the pillar, which was semi-prostrate, and resting against the stone forming the south side of the entrance to the chamber (no. 6) in such a way as to block the passage. It soon became evident that it still occupied the position it had assumed when it was 'overturned' at the violation of the monument in the eighteenth century, in spite of a definite statement that it lay prostrate in 1847,¹ supported by a drawing made in 1802 by the Rev. John Skinner, which shows it lying east and west in the centre of the chamber beside the hole in which it once had stood.² The packing blocks placed with extreme care around its base were still in position (pl. xliii, fig. 1), with the exception of one or more which had been withdrawn from the south-east side, and so allowed the pillar to incline in that direction. The fact that these packing stones were still *in situ* made it a physical impossibility that the pillar could ever have been completely withdrawn from its socket. Its heel had only moved about 9 in. to the northward—partly as a result of Capt. Lukis's examination. The stone was eventually set upright again, and the packing stones had preserved the shape of the socket so accurately (pl. xliii, fig. 1) that the position it now occupies is precisely that in which it was first placed (pl. xlii, figs. 1 and 3).

¹ *Arch. Camb.*, 1847, p. 6.

² J. Skinner, *loc. cit.*, p. 24.

There is a possible error of 2 in. or so in its height, as the pointed heel was resting on gravel. This fact alone makes it extremely improbable that the pillar was ever intended to sustain any weight; moreover, no additional support was needed by either cover-stone, and there must have been an interval of at least 5 to 7 in. between the summit of the pillar and the under side of the roof.¹

It may be noted, however, that this alone would not have been an insuperable obstacle, as there are precedents for the insertion of wedges between uprights and the cover-stones they support, e.g. at Capel Garmon² and La Hougue Bie.³

THE CHAMBER

During and after the replacement of the pillar, portions of the moraine gravel used to level up the chamber were examined, and the sides of uprights nos. 2, 3, and 4 were exposed to their full lengths, thus revealing the careful arrangement of packing blocks placed at their feet, and concentrated in the angles. As ascertained later, the heel of every upright except no. 3 was resting directly on undisturbed gravel.

It was clear that most, if not all, of the material forming the floor of the chamber had been previously disturbed, and no trace was found of the 'pavement of flat slabs', mentioned in another letter from Capt. Lukis, quoted in *Archaeologia Cambrensis* in 1869.⁴ His letter of 19 November suggests that the flat slabs were actually the packing blocks placed to keep the pillar in position. The present floor-level of the chamber just covers these. The pillar is 8 ft. 3 in. long, and now projects 5 ft. 9 in. above the floor-level. Except where it has suffered damage the whole of its surface is smoothed and rounded, and it is slightly flattened on the north-east (pl. XLII, fig. 3) and north-west sides opposite to stones 7 and 5. The upper 1 ft. 9 in. of the south-west side has been split off and lost, thus depriving the pillar of its symmetry. It tapered at both ends, the maximum circumference being 4 ft. 7 in. at 4 ft. 3 in. below the top of the stone.

THE SPIRAL

One of the uprights, no. 4, a very hard boulder of glaucophane schist, bears an incised spiral on its inner face (pl. XLV, fig. 1). The pattern is about 5 in. in diameter, and consists of about two and one-third complete rounds; the inner dies away into the central turn, but the outer end is free. Natural lines of cleavage,

¹ Ritual pillar stones were also found in the cairns at New Grange and Carrowkeel (R. A. S. Macalister, *Ireland in Pre-Celtic Times*, Dublin, 1921, p. 353), and, carved in the rock, in one of the tomb caves in Mallorca (W. J. Hemp, *Archaeologia*, lxxvi, 141).

² *Arch. Camb.*, 1927, p. 3.

³ Société Jersiaise, *Bulletin Annuel*, 1925, plates.

⁴ p. 142.

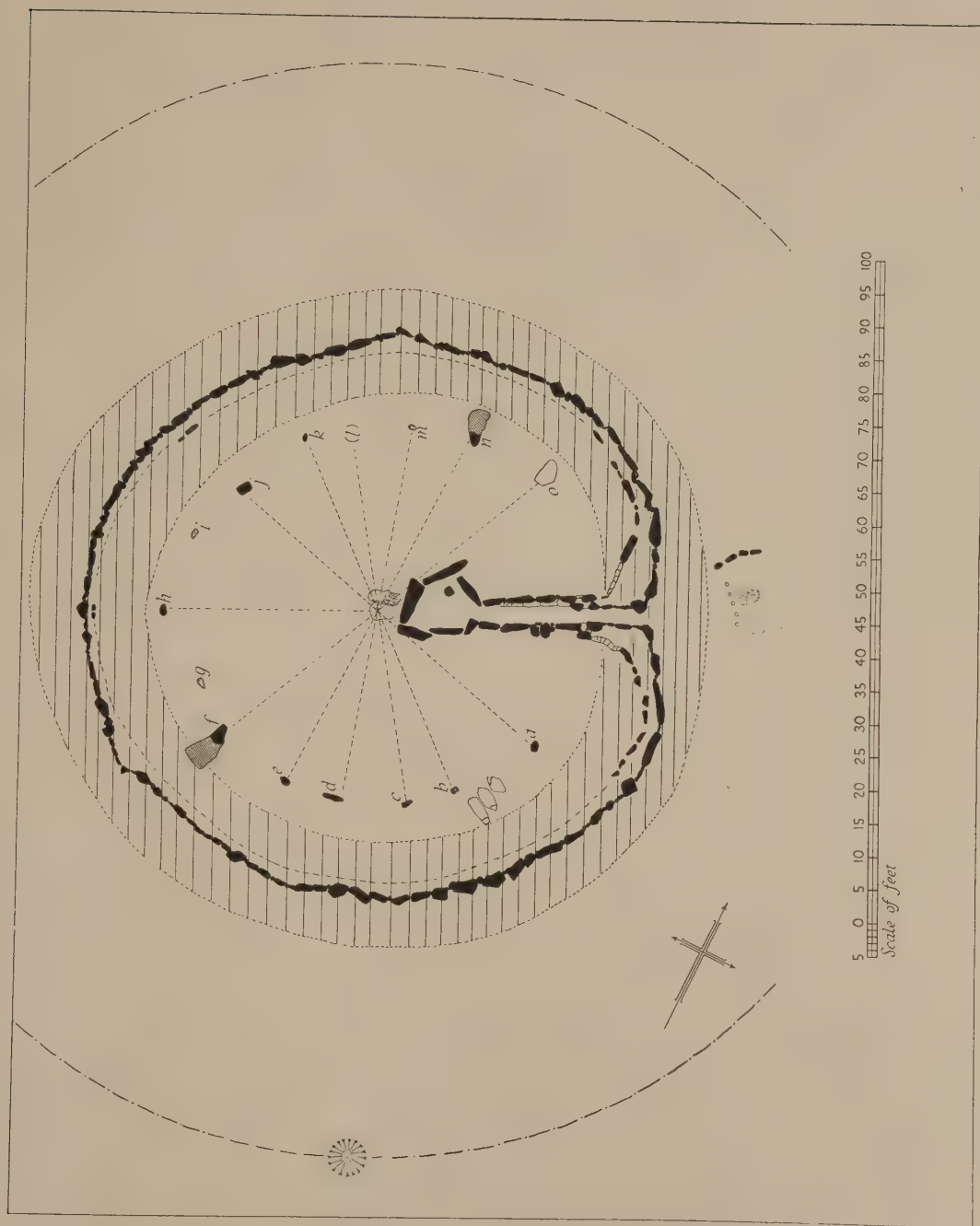


Fig. 1. General Plan. The shaded area represents the approximate extent of the ditch. The outermost circle marks the base of the cairn.

which in one place result in the splitting off of part of the surface of the rock, somewhat mar the continuity of the line, but its course and extent are quite clear. It appears to have been cut by a tool having a straight chisel-edge about an inch and a quarter long, which was probably held in position and hammered into the stone, hence the curves of the spiral are somewhat irregular, being composed of a succession of straight or almost straight cuts.

Upright no. 7, flanking the entrance on the north, has been considerably 'dressed' to fit its position. The south-eastern edge and south-western face have been smoothed by hammering or picking, and a shoulder has been carefully wrought to take the edge of the last cover-stone of the passage, C (pl. XLV, fig. 3). The north-western edge also has been dressed, but in a quite different manner. The upper part of the stone being too wide, it was reduced in size, a straight edge being obtained by striking a few large flakes off either face with a heavy maul: the same method that a mason would employ to-day (pl. XLII, fig. 2). The newly-added walling of the chamber has been kept back so that the edge of this stone can be examined.

Stone 5 also shows signs of dressing.

The smaller cover-stone was lying beside the chamber (pl. XLI, fig. 1). It was decided to replace it, and provide a secure bearing for the main cover-stone.

Various proposals were made, and it was eventually considered by H.M. Office of Works that the best method would be to take the weight on two beams supported by uprights outside the chamber. This scheme made the replacement of the fallen stone an easy matter. Unfortunately, for reasons of economy, the beams were made of reinforced concrete, and they are therefore clumsy and obtrusive. As little or nothing is known at present about the effective life of this material, the walling stones which were placed to close the intervals between the uprights and the cover-stones, replacing the lost original walling, have been so packed that they will support the cover-stones unaided should the beams perish.

One noticeable feature about Bryn Celli Ddu had always been that some of the stones and earth of the mound still remained upon the main cover-stone (pl. XLI, fig. 1). This material was removed and replaced again to ascertain whether there were any cups or other markings on the upper surface of the stone. None was found, and the upper and under surfaces of the smaller cap were equally bare, but the adjacent edges of both stones had been skilfully dressed so as to fit closely one against the other (pl. XLV, fig. 4). The larger stone, of grit, had been carefully smoothed by pocking, the result being a surface similar to that found on many of the stones at Stonehenge. The smaller stone, of schist, had also been dressed, probably by the same method, but the



Fig. 1. Chamber from NE. before treatment



Fig. 2. Replaced cairn from W. and stones marking circle 4

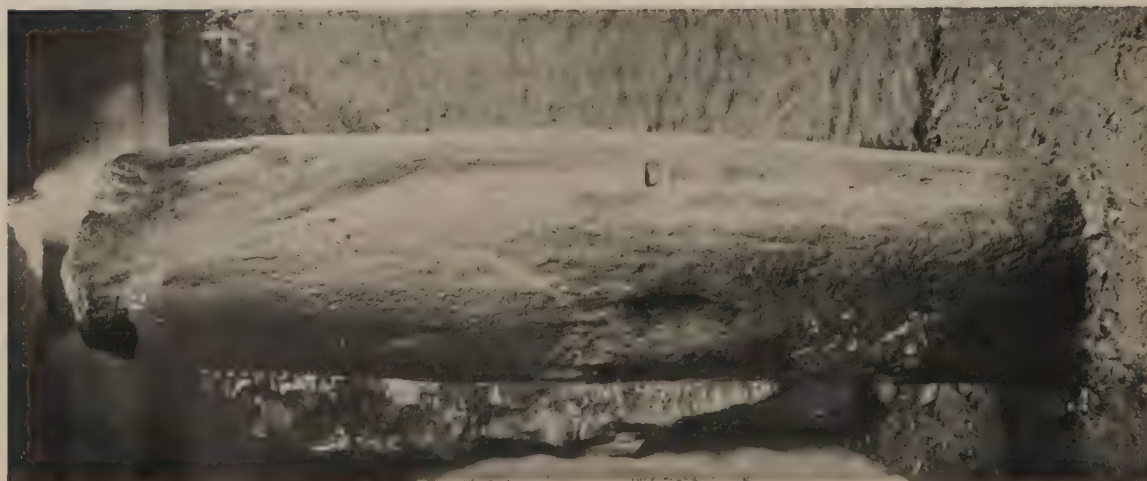


Fig. 1. Pillar from west

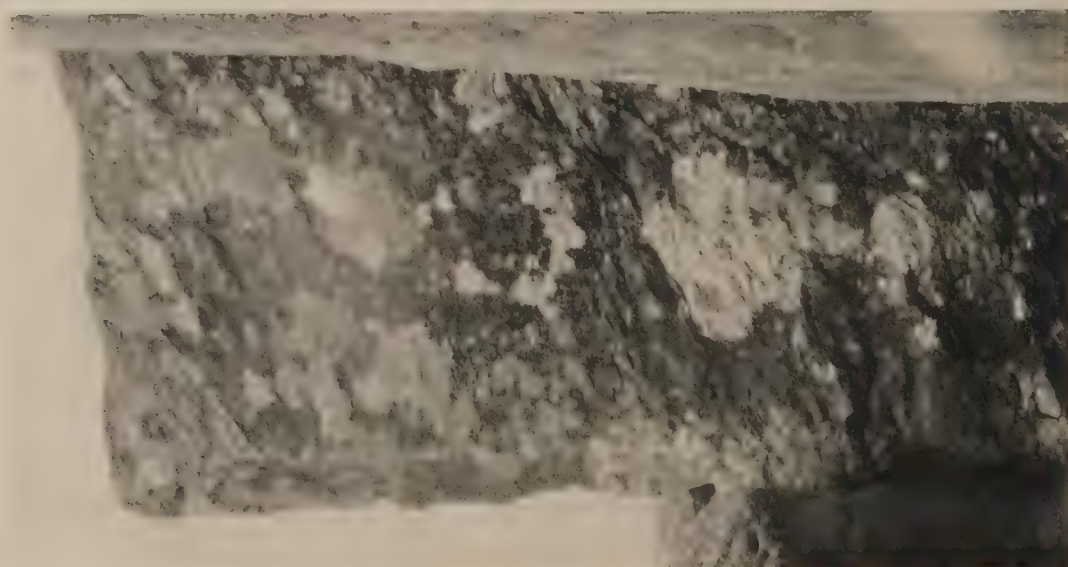


Fig. 2. Hammer-dressed edge of stone 7

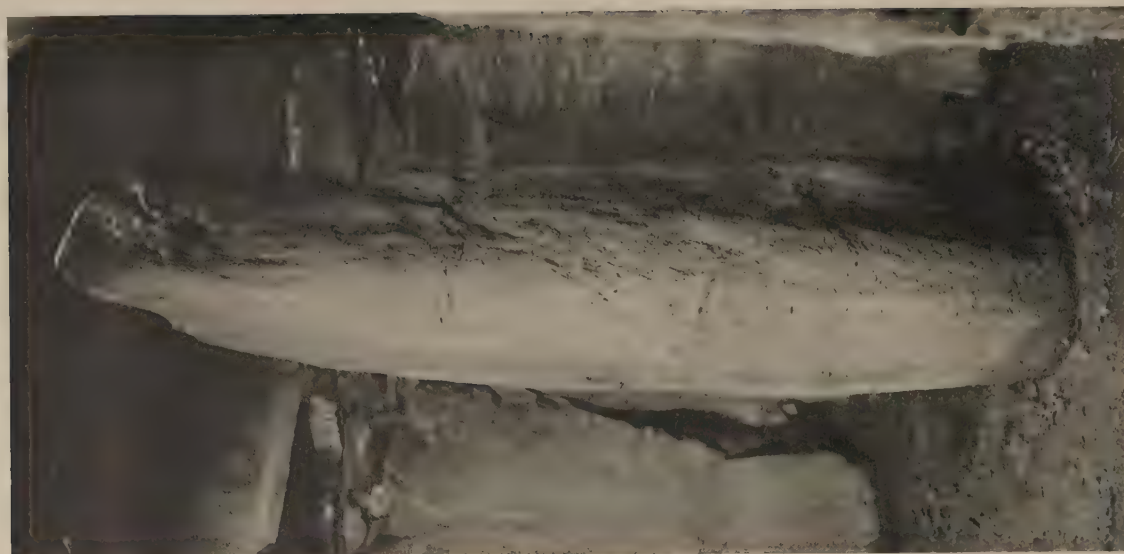


Fig. 3. Pillar from south

evidence was not so well preserved. Originally the fit must have been very close, but portions of the edge of the larger stone have split off.

Holes sunk outside and immediately adjoining certain uprights of the chamber, nos. 2, 4, 5, 6, and 8, to take the supports carrying the concrete beams, revealed the size of the stones placed outside the uprights to pack them in position (pl. LIII, fig. 1). For instance, against the lowest 2 ft. 6 in. of stone 4 were set large stones, many averaging about 30 lb. in weight, packed loose, i.e. without clay or gravel; resting on them was 15 in. of gravel, and above this again stones and earth which had probably been disturbed.

The following is a list of objects found within the chamber. Most of the material which was shifted during the recent work and all that was removed was passed through two sieves of $\frac{1}{4}$ -in. and $\frac{1}{2}$ -in. mesh.

A. *In November, 1777.*

Many human bones, uncremated.

B. *In 1865, by Capt. Lukis.*

Small fragments of unburnt human bones.

Burnt human bones.

'A broken flint knife.'

'A javelin head.'

Limpet shells.

Charcoal.

A small piece of lead.

C. *In 1925-9.*

Fragments of burnt and unburnt human bones and teeth, cockle, mussel, and limpet shells.

Two fragments of chert which fit together to make a rough end-scraper.

THE INNER PASSAGE

The passage was completely blocked with soil and stones, and each of the three roofing stones C, D, and E was out of position owing to the withdrawal or decay of the bearers on which their ends originally rested. Clearance was necessarily made from the chamber eastwards towards the entrance, and at first the south side of the passage was followed for a few feet. It soon became evident that the filling, which in some places reached the cap-stones, belonged to two periods. A typical section taken between stones 10 and 11 gave (1), an upper layer averaging 1 ft. 6 in. deep consisting of loam containing a few stones and many tree roots, lying on (2), 4 in. of stones which in turn

covered (3), 7 in. of hard soil, resting upon the lowest layer (4), consisting of 6 in. of small stones covering the old floor of the passage. The dividing line between the earlier and later periods of this filling was clearly marked by a well-trodden surface between layers (2) and (3), on which were found fragments of clay tobacco-pipe and a metal button, both probably of late eighteenth-century date. There can be but little doubt that the surface on which these lay was the pathway trodden down by the first visitors to the tomb in 1777, the filling below it (layer 3 and 4) being composed of the material which fell into the passage when the cover-stones were first displaced, while the upper part (layer 1) must have been deliberately placed there in recent times, perhaps to prevent children from playing beneath the insecure roof.

THE CLAY-SET WALL

In 1927 the northern side of the western section of the passage was cleared, and there came to light a low wall of flat stones which had been set in clay¹ (pls. XLIII, fig. 2 and XLIV, fig. 1). This remained intact up to the level of the 'pathway'. It is possible that it was originally a little higher, but no evidence was found to suggest its exact height. The wall dies away against stone 9, just short of the entrance of the chamber, and begins at the foot of 17, one of the four uprights which mark the entrance to the inner passage. At this end it stands at its greatest and possibly its original height, except that two or three courses are missing at the junction with stone 17. Whatever the purpose of this wall may have been—its connexion with the general design will be considered later—it does, in fact, give a constant width to the floor of the passage and its slight curves follow those of the south wall.

Several uprights of the main wall of the passage against which it rests have been tooled, and this dressing is carried down behind the wall. The discovery of this wall strengthened the case for the previous existence of the 'stone bench' along the sides of the chamber described by Pennant. Moreover, such a bench, about a foot wide and the same height, exists round two sides of one of the end chambers in the round cairn of Unstan in the Island of Orkney,² in which were found round-bottomed vessels bearing chevron ornament.

A possible parallel to the existing wall in the passage may be seen in the long stone shelves which are to be found in some of the rock-cut burial caves

¹ The use of clay, combined with walling, in cairns has been recorded previously, e.g. in Caithness (A. J. H. Edwards in *Proc. Soc. Ant. Scot.*, lxiii, p. 143) and Yorkshire (J. R. Mortimer, *Forty Years' Researches*, xxi and xl).

² Dr. Joseph Anderson, *Proc. Soc. Ant. Scot.*, xix, p. 341; the bench, however, is not recorded. Prof. V. G. Childe tells me that similar benches, also unrecorded, exist in the chambered cairn of Taversøe Tuick in Rousay, Orkney (*ibid.*, xxxvii, p. 73).

in Mallorca;¹ on one of these is carved a series of penannular rings and small basins which by analogy were intended to contain offerings. The parallel, however, is not sufficiently close to be insisted upon.

The only objects discovered during the clearance of the passage were many fragments of human cremated bones scattered on the floor, apparently in greater numbers on the northern side of the passage than on the southern, together with human teeth and a small proportion of fragments of unburnt human bones.

The floor-level of the passage on which the base of the clay-set wall rested was of the local moraine gravel, and appeared to have been roughly paved with small flat stones 2-3 in. thick and averaging 6 in. across, but the bulk of the stones covering it almost certainly fell from the roof when the covering slabs were displaced. The fragments of burnt and unburnt human bones were lying on and among the small paving stones.

A hole sunk at the base of stone 9 revealed packing stones for its support at 10 in. below the bottom of the clay-built wall.

The general method of building the passage was to place uprights side by side and to fill in any interval between them with dry walling, to dress the tops of the uprights, and rest upon them more dry walling or large single stones bridging the intervals; upon these rested the roofing stones. These cross bearers extended back some distance into the mound, and it was their withdrawal in the course of the destruction of the cairn which first displaced the roofing stones. Most of the uprights selected had flat sides to form the walls of the passage, projections having been tooled away, but a departure from this practice was made at one point on the south side. Here two stones (nos. 12 and 14) are so placed as to have narrow faces towards the passage, leaving two recesses on either side of no. 14. In each recess was placed on end a smaller stone partly embedded in the floor of the passage and projecting a few inches beyond the general line. Opposite to these there is a slight recess in the clay-built wall.

These two pointed stones each standing in its niche were probably baetyls such as have been found in tombs of this nature, e.g., at Carrowkeel² and La Hougue Bie.³ One of them bears scratchings which might be taken to represent a human face, and a more convincing series of incised zigzag markings, but Dr. North, Keeper of the Department of Geology of the National Museum of Wales, is definitely of the opinion that all are due to glacial action.

Three cover-stones at present form the roof of the inner passage; all of

¹ W. J. Hemp, *Archaeologia*, lxxvi, pp. 126, 128.

² R. A. S. Macalister and others, *Proc. R. Irish Acad.*, xxix, p. 333.

³ Société Jersiaise, *Bulletin Annuel*, x (1925), pp. 215-16.

them are boulders of irregular shape, but were selected for their flat under surfaces, which provide the passage with a surprisingly level roof. The sides of all three have been dressed to fit against one another, and in the case of C, that nearest the chamber, to fit its position against the uprights of the chamber itself, one of which (no. 7), as already mentioned, has a carefully worked hollow to receive it. The cover is now slightly out of its original position, as the southern end was found to have been split off (and is now doing duty as a step in a neighbouring stile), leaving the stone with a very insufficient bearing. It was therefore moved some inches farther to the south.

The outer edge of stone E is dressed to fit the missing cover of the portal. The position of this surface makes it particularly suitable for close examination (pl. XLV, fig. 2). The top of upright 17 has been hollowed to fit the curve of this cover-stone: it may have partly supported it, but more likely the weight was entirely carried by the side walls.

Upright no. 8, a grit stone, the top of which has been levelled to carry walling, has grooves on its northern face which might possibly be deliberate markings. Mr. Miles Burkitt, who examined them carefully, was of the opinion that all were of either accidental or natural origin.

THE PORTAL

The part of the passage to which this name has been given is an area between the inner passage and the outer passage bounded by stones 15 to 21, and having marked peculiarities. It is certain that it was originally roofed by a cover-stone, the 'square stone covering the mouth of the passage' which, according to Skinner, a farmer came upon whilst removing some of the stones from the north-east side of the cairn. As just recorded, the eastern edge of the last remaining cover-stone is dressed to fit its lost neighbour, which was set at a slightly higher level.

It is clear from Skinner's description that the inner passage was passable, and the recent excavation of the outer passage proved that this, on the other hand, was carefully and elaborately blocked. The greater portion of this blocking was still *in situ* in 1927 and came to an end between stones 18 and 21.¹

The westward termination of the portal is marked by two small cross walls reaching even now almost up to the cover-stone and built at right angles to the axis of the passage; they connect stone 15 with 17 and 16 with 18. Stone 18 was similarly linked with stone 20, but 19 and 21 are so close together that probably no walling was needed—in any case the small interval was found to

¹ At La Hougue Bie the blocking similarly stopped at a point otherwise marked by the raising of the roof (*loc. cit.*, p. 209).



Fig. 1. Base of pillar in socket; packing stones on left unmoved and site of removed ones on right



Fig. 2. Clay-set wall as first uncovered, and dressed face of stone 13



Fig. 1. Clay-set wall as first uncovered, and dressed edge of stone 7



Fig. 2. Stones 2 and 3, with pattern stone and central stone when first exposed

be filled by a solid mass of tree-root. Stones 15 and 19 are joined by a remarkably perfect section (pl. XLVI, fig. 1).

It is singularly fortunate that this very slight walling, on the north side only 3 to 4 in. thick, should have remained intact almost to its full height, in spite of the presence of the roots and tree stumps which made the clearance of the portal a matter of extreme difficulty. It was impossible to be certain of the original height of the comparatively rough walling forming the sides of the passage between stones 16 and 20, and 17 and 21. The bottom stones only in each case were found undisturbed, and each wall has now been rebuilt to the same height as the walls of the outer passage, about 2 ft. 6 in. This is probably the original arrangement, for the filling as replaced just covers the base of the walling connecting stone 15 with 17 and 15 with 19, also that joining 16 to 20 and 18 to 20.¹

The recesses on either side of the passage, just outside the entrance to the inner section of the monument, are probably an important link in what may be termed the ritual history of the monument. Taken together they seem to represent the antechamber which is so constant a feature in the burial caves of the Mediterranean and also of those of the Petit Morin in Northern France, which are closely linked with the dolmens of the Paris region; some of the Petit Morin antechambers contain a ledge and so emphasize the resemblance. In Britain, the round and long chambered cairns, at Camster and elsewhere in Caithness, have well-marked antechambers between the passages and the main chambers.

At Camster the antechamber is further marked by having its roof at a higher level than that of the passage, and this feature must similarly have distinguished the Bryn Celli Ddu antechamber, as is proved by the height of stones 18 and 20 on which the cover-stone of the portal must have rested. No definite evidence now remains to show the exact size of this stone or its extension eastwards, but this could not well have been more than 4 ft. from the last cover-stone of the passage, as it must have been supported by stones 18, 20, and 21 (pl. XLVI, fig. 2). The last of these was badly mutilated by the destroyers, the upper 18 in. of its height having been smashed off; it had been completely hidden for many years by the trunk of a tree growing immediately above it.

The removal of the cover-stone of the portal and the consequent dislodgement of the topmost stones of the blocking would have just revealed the existence of the inner passage: before this could be entered, however, the upper part of the blocking would have to be removed. The instinct of a non-scientific

¹ At several points, e.g. between stones 8 and 10 in the passage, the dry walling filling the intervals between upright stones was laid horizontally above ground-level, but perpendicularly below.

explorer would be to push down the stones into the passage to form a sloping way in, and it is likely that this action sealed up the adjacent part of the clay-set wall to a maximum depth and so preserved it to a greater height than elsewhere. Possibly the falling stones displaced the top courses adjoining 17. The exceptional presence of a few flat stones such as were used for walling, lying in no order in the filling of the passage at this point, was particularly noted when this area was being cleared.

Positive evidence is lacking, and even if the theory had been held when this part of the passage was being cleared, it is doubtful whether it could have been tested, as the filling was riddled by a mass of matted roots from the two large trees growing less than five feet away.

PRESERVATION

It was necessary to cover in the chamber and inner passage once more, partly in order to hide the ends of the beams and their supports, but also to keep out the wet, as the pillar-stone standing immediately beneath the junction of the caps was flaking badly, while the rain entering the passage through the gaps between the cover-stones A, C, D, and E would tend to disintegrate the clay-set wall and wash away the clay.

The cover-stones in the passage—all in a precarious state—were re-set, the exact levels being given at either end by 'shoulders' worked in stones 7 and 17. The resetting meant the replacement of certain lost or badly decayed bearers and lost parts of the dry walling. All new masonry has been marked by small pits drilled in the outer face of each stone.

THE OUTER PASSAGE

This remains almost intact. It was found to be completely filled by the original blocking of stones and earth placed there when the tomb was sealed before the completion of the cairn.

The relative age of the blocking was proved by the fact that the stones were carefully packed in clay, and that scattered among them were occasional cremated bones, down to a level about 3 in. above the floor. This was of gravel with no paving stones, and bare of cremated bones, except that a deposit of about a dozen fragments was placed in a small hollow about an inch deep in the centre of the passage opposite stone 22. Just beyond, opposite stone 24, were two exceptionally large stones, one 16 in. by 13 in. by 13 in., and another resting on it 18 in. by 18 in. by 9 in. Close by, opposite stone 22, the passage was crossed by a barrier of water-worn and deliberately broken pebbles of white quartz such as were found all over the site.

The walls of the outer passage are only 2 ft. high, and consist of uprights connected by dry walling carefully built of selected stones, flat rectangular

slabs of limestone, probably brought from the nearest outcrop in Plas Newydd Park. Some of the uprights show signs of having been dressed.

It will be noticed from the plan that the stones terminating the passage, numbers 25 and 26, are unsymmetrically placed: a possible explanation of this will be given later. Both these stones have been mutilated by having their tops smashed away. No doubt this was due to the efforts of the farmer to clear the field for cultivation, probably in 1858. The adjoining stones of circle 2 are similarly mutilated (pl. XLVII, fig. 1), and it seems likely that the circle was higher here than elsewhere, to conform with the corresponding rise in the level of the stones of circle 3 and to mark the importance of the forecourt.

THE FORECOURT

By far the most difficult part of the excavation was the area in front of the entrance to the passage. Here there was no precedent to help in the recovery of the plan. The heaped up material of the mound consisted of stones of all sizes, gravels, coarse and fine, clean and dirty, as well as clays of different colours, sometimes clean, at others mixed with gravel. Add to this that part of the work here had to be done while the ground was exposed to the weather; and, the most confusing fact, that the axis of the lay-out was eventually found to be different from that of the rest of the monument.

The blocking closing this outer entrance to the tomb was continuous with the blocking of the outer passage, and was composed of large stones interspersed with gravel and clay (pl. XLVII, fig. 2). It was found to spread out fanwise beyond the entrance to the outer passage for 7 or 8 ft. on the axis, and to extend about 6 ft. on either side, rather like the cork of a champagne bottle, or perhaps a better simile would be a section of an onion, as it was obvious that the material close to the entrance had been placed in successive perpendicular layers, the larger stones in many cases being placed on end. As the blocking spread outwards it became indistinguishable from the general mass of stones, gravels, and clays, the remains of the cairn which still covered the outer areas of the mound.

At the outer edge of the blocking were occasional cremated bones, quartz stones, some of them the usual broken pebbles, and many fragments of charcoal—one patch of charcoal was particularly noticeable, about 1 ft. 6 in. in diameter, 8 ft. from stone 27 on a line parallel to the main axis, probably marking the site of a fire. This was about 1 ft. above the level of the floor.

A large patch of quartz was found in a single layer laid upon the courtyard level under the 'cork' opposite stone 27, and spread as a non-continuous fringe under the outer edge of it.

In removing the last section of the 'cork' outside the entrance, signs of a fire—charcoal in a hollow in the body of the blocking—were found a little south of the centre, possibly continuous with a larger 'hearth' to the east, while yet another such has already been mentioned. In any case ceremonial fires had been made at several points during the process of blocking the entry, and there were two more definite 'hearths' flanking the entrance—areas roughly paved with flat stones set in clay, and bearing evident signs of fire, adjoining stones 25 and 26, and partly covered by the spread of the 'cork'.

Immediately in front of the entrance was a small mound of stones set in clay about 9 in. high, 3 ft. 6 in. long, and 2 ft. wide, over which the pathway passed, and inserted in and against the southern side of it was a considerable deposit of completely burnt bones which probably represented less than half the cremation of an adult male (pl. XLVII, fig. 2). It had been placed in a 'basin' of clay 1 ft. deep, measuring about 3 ft. east and west and 1 ft. 6 in. north and south. The bones were intermixed with small stones before being placed in the 'basin', which seemed first to have been lined with stones. It appeared that the 'basin' had been hollowed out of the mound after it had been trodden upon; perhaps this fire represented one of the last rites before the final covering in of the monument.

When the blocking had been completely removed from the outer passage and the forecourt, it was seen that the passage dipped downwards from the portal until it reached its lowest between stones 25 and 26, from which point the court-yard sloped upwards again (pl. LV, sec. 5). This device, which must have been deliberate, had the result of increasing the apparent height and importance of the portal. It also marks the spot where the passage crossed the centre line of the ditch.

The impression received while clearing the forecourt was that at several stages during the heaping up of the materials used to cover it in, areas of varying size had been trodden hard. These areas shaded into one another, and it was impossible to follow them out completely or to distinguish them. Two of the floors so formed are indicated on section 3 (pl. LV).

Just at the end of the season five post-holes were discovered, each about 6 in. in diameter, and averaging 1 ft. in depth (pl. XLVIII, fig. 1). Two of them contained remains of carbonized pine-wood; probably its condition was due to age rather than burning, and the bark was traceable in places (see Appendix II).

Both the location and the clearing of these holes were a matter of much difficulty, and their discovery is due to the skill and patience of Mr. William Griffith, the foreman. They were sunk into dirty gravel, and filled with precisely the same material, which presented the same appearance whether it had been deposited in any particular position by nature or by man. In such



Fig. 1. Spiral on stone 4



Fig. 2. Dressed surface of
cover E (†)

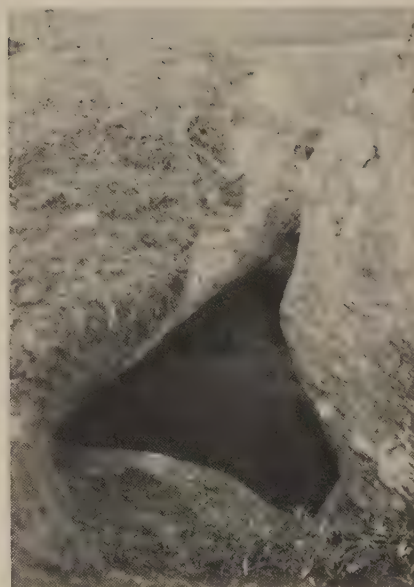


Fig. 3. Stone 7 with hollow to receive
cover C

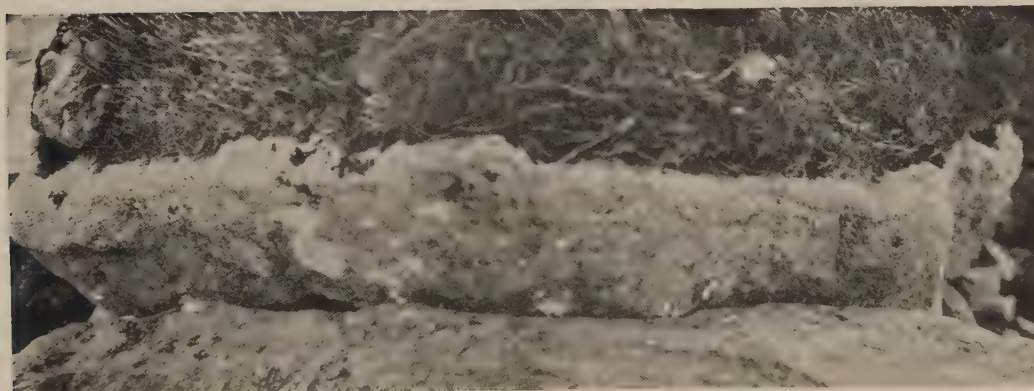


Fig. 4. Covers A and B replaced and fitted together



Fig. 1. Antechamber north of portal; stones 17 and 19, and
walling between 15 and 19



Fig. 2. Portal and outer passage (walling of circle 3 covered by soil)

soil it is only by feel that it is possible to detect the slight hardening which distinguishes the side of a hole, and marks the position of a filling deposited in material identically the same, which may, or may not, be less loosely packed. The detection of replaced soil is made still more difficult by the fact that nature, when laying down moraine gravels, counterfeits human action, and consequently lays traps for the excavator by making discontinuous lines of stratification precisely similar to those produced by early man when casting his basket-loads of soil and gravel.

The five post-holes were fairly accurately disposed on the arc of a circle, the most southerly one being on the main axis of the monument, and it was consequently expected that the series would be continued southwards. Before the 1929 season's work the whole of this area in front of the entrance was roofed over in order that the soil might dry out, as the difficulties of excavation were very much increased when it was wet. Preliminary trials failed to locate any certain extension of the system of post-holes in either direction.¹ Mr. R. S. Newall took charge of the work, a particularly unpromising task, as in addition to the natural difficulties of the site much of the area had already been disturbed by the inconclusive work during the previous season.

Beyond the post-holes was found a shallow pit (pl. XLVIII, fig. 1), slightly sunk into a clay floor, and in the pit was the skeleton of an ox, apparently complete except for the horns and portions of the skull immediately adjacent to them, which had probably been destroyed by cultivation. The body had been doubled up and crammed into as small a hole as possible, the head twisted round towards the entrance to the tomb.

Dr. J. Wilfrid Jackson and Mr. C. Bryner Jones, C.B.E., have kindly examined the bones. Neither has been able to come to definite conclusions as to date. The bones are not recent, but it is conceivable that as the site is near a farm and was not available for cultivation, the animal may have been buried within the last few centuries. Against this hypothesis must be set the symmetrical position of the body on the axis of the forecourt, and the fact that it lay in a hollow on the clay floor, a double coincidence if the burial is modern, and also the resemblance to the animal of early Bronze-age date from Woodhenge, noted in Dr. Jackson's report (see Appendix I).²

As Mr. Newall proceeded with the clearing of the area he discovered a line of stones on edge, and set in position in such a manner as to distinguish them from the more casually placed filling of stones and soil which covered

¹ The small size of the post-holes suggests that they may have carried the uprights of a screen of wattle.

² Ox vertebrae were ceremonially disposed in the Carrowkeel cairn, which contained a ritual pillar (*Proc. R. Irish Acad.*, xxix, pp. 343, 346).

the area south of them (pl. XLVIII, fig. 1). Stones similarly placed in a parallel line on the opposite side of the forecourt had been removed previously when search was being made for the expected southward continuation of the line of post-holes.

When the results of the examination of the forecourt were plotted the source of much of the difficulty was revealed, as it became evident that it had been laid out on an entirely different axis from the rest of the monument, i.e. one passing through stone 24 and through the central post-hole (see fig. 1 and pls. LIV, fig. 1, and LVI). Possibly the unsymmetrical arrangement of stones 25, 26, 27, and 28 may be related to this change of axis.

THE CENTRAL STONE AND PIT

The complete reconstitution of the passage and chamber would have meant that the latter would be in darkness; it was therefore decided to leave the existing opening between stones 2 and 3 unfilled by walling in order that it might serve as a window; also to lower slightly the level of a small area outside, so that the pillar could be more easily viewed, at the same time building modern wing walls on either side of this area to retain the mound.¹

When the ground was lowered it was found to consist of medium-sized stones, the upper layers of which had been disturbed; beneath them was a large slab of schist placed horizontally, but dipping downward from south to north. It measures about 3 ft. 6 in. by 2 ft. 6 in. This stone was found to have been placed as nearly as possible in the centre of the monument (fig. 1 and pl. XLIV, fig. 2).

In due course the stone was lifted. It showed no sign of dressing, but before it was replaced an interesting sequence of events was revealed. A pit had first been sunk in the natural gravel; the bottom of the pit had been scorched and hardened by fire, and on it were lying a few fragments of charcoal and one burnt bone, a human right ear-bone. There was also lying on the bottom one piece of unburnt wood with some of the bark adhering, much decayed, but still identifiable as hazel.² The pit had been filled with a mixture of clay and stones, resting on a layer of brown clay, laid on the bottom, and containing two pieces of jasper, larger than the pebbles of this material which commonly occur on the site in the local moraine gravel. Into this filling was inserted a lump of purple clay roughly in the form of an inverted cone, on the top of which was worked a shallow hollow about 6 in. in diameter, which was immediately covered by the stone. The hollow was free of any filling, and nothing was found to indicate the purpose for which it had been made (pl. XLVIII, fig. 2, and pl. LV, sections 2, 5, and 6).

¹ The writer hopes that some day it may be possible to provide artificial lighting and to fill in the missing section of the mound.

² See Appendix II.

THE PATTERN STONE

North of the central stone, just overlapping its lower side, and therefore at a slightly higher level, was another and larger stone, of grit, 5 ft. long, 2 ft. wide, and 1 ft. thick (pl. XLIV, fig. 2). When this was cleared the eastern end of the upper surface was found to be covered with an incised pattern (pl. XLIX, fig. 1). It was lying flat, and the pattern was found to cover part of the under side as well, and to extend over the eastern end (pl. XLIX, figs. 2 and 3).

The western end of the stone was resting on a packing of small stones, containing fragments of charcoal; elsewhere it covered gravel of medium fineness, and its eastern end just came short of the upright of the chamber (no. 3), two small stones only intervening, which were carefully packed in on edge. When the time came to move it, it was found that north and west of it there was a floor of purple clay, averaging 2 in. to 3 in. in thickness, and laid level with the upper face of the stone (pl. I, fig. 1). The existence of this clay layer in relation to the stone proved conclusively—although it was already self-evident to the excavators—that the pattern stone had been deliberately placed by the builders of the monument exactly as it was found in 1928, and that its recumbent position could not possibly be due to accident. The stone was raised on 14th November 1928, and now is housed in the National Museum of Wales at Cardiff, a cement cast taking its place at Bryn Celli Ddu, so placed that the whole of the pattern can be examined. The stone being of coarse grit, it would inevitably have deteriorated if left exposed to the weather.

The recumbent position of the stone, as found below the level of the clay floor, and the disposition of the pattern inevitably suggest that it was intended to be set upright in the ground at some stage in the funeral rites in such a way as to display the pattern. As it is of local material, the same grit as the larger cover-stone of the chamber, there seems to be no reason for thinking that it may have formed part of some other monument.

It is in any case quite certain that the position in which it was found was due to the deliberate action of the builders of the monument, not to a fall or overturning by violators of the site.¹

The patterns are best explained by the illustrations (pl. XLIX), especially the careful drawing made by Mr. W. F. Grimes, Assistant in the Department of Archaeology in the National Museum of Wales, which demonstrates that all the markings form part of a single design. It is formed by incised lines,

¹ It is not unusual to find the patterns on megalithic tombs so placed that they would be invisible after the completion of the monument; e.g. the cup marks on the cover-stones of dolmens, the patterned stones at New Grange, one of the uprights at La Hougue Bie, and other instances in Brittany such as Gavrinis.

averaging 2 to 3 mm. deep and 7 to 8 mm. wide, probably the result of percussion with a pointed tool.¹

The meaning of the pattern is unknown, and speculation is idle, but some form of 'magic' is perhaps the most obvious explanation. The style is familiar from several megalithic sites in Brittany² and Ireland,³ where the spirals, curves, and zigzags are recurrent features. The most individual feature on the Bryn Celli Ddu stone seems to be the closed pattern giving a leaf-shaped outline.

One curious circumstance should be mentioned. When the stone was first lifted it was photographed at once before being covered up to shelter it from frost. The photographs taken then, and again some weeks later, before the stone was packed for its transport to Cardiff, showed a faint but definite zigzag pattern on the western half of the under face (pl. XLIX, fig. 3). This pattern was observed by all present. When the cast made at Cardiff was examined no such markings could be found, nor can they now be traced on the stone in its present position.

The markings were not due to any traceable paint, and the only explanation seems to be that they represent lines of cleavage too faint to be observed except in certain lights.

THE CIRCLES

When the outer passage was being cleared it was found that the area immediately behind the uprights on either side was tightly packed with stones set in clay forming an approximately regular 'platform', level with the top of the walls (pls. XLVI, fig. 2, and XLVII, fig. 1), and on the last day of the 1928 season's work a small low dry-built wall was found standing on this 'platform' beginning at stone 18 and turning away in a south-easterly direction (pl. LIV, fig. 1). Only two or three courses of walling remained, and the lowest of these was on a level with the top of the passage wall.

This discovery, supported by that of the remains of a corresponding wall on the other side, at once suggested that the plan was likely to be much more elaborate than had hitherto been suspected. It had already been established that the outer passage ended at a break in a wall of upright stones, which presumably surrounded the monument and was slightly set in at the entry of the passage; in fact that the monument, although megalithic, was more or less of

¹ 'Pocked lines', no. 2, in Mr. Burkitt's chronological sequence of techniques; see *Ipek*, 1926, p. 52, 'Notes on the art upon certain megalithic monuments in Ireland'.

² M. et E. Péquart et Z. le Rouzic, *Corpus des Signes gravés des Monuments Mégalithiques du Morbihan*, Paris, 1927.

³ G. Coffey, *New Grange*, Dublin, 1912; E. A. Conwell, *Proc. R. Irish Academy*, xv, 72; W. Frazer, *Proc. Soc. Ant., Scotland*, xxvii, 294.

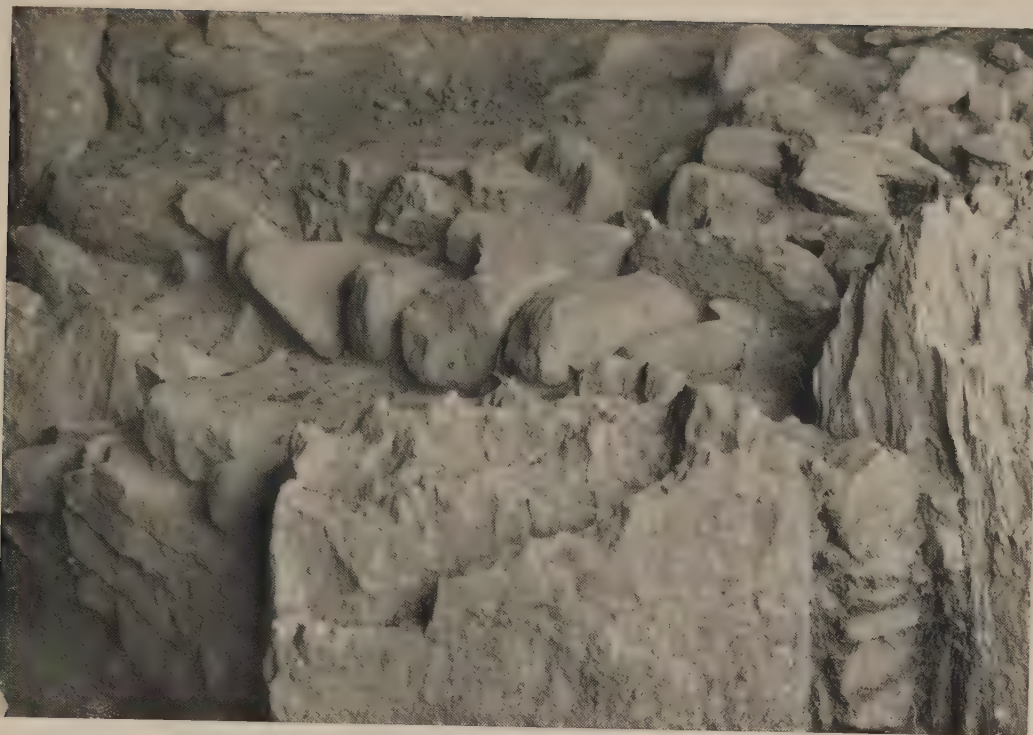


Fig. 1. Stone 25, dry walling on either side of it and filling of ditch behind



Fig. 2. Entrance from north; greater part of 'cork' removed exposing mound in causeway and flooring of hearth against stone 28



Fig. 1. Forecourt, post-holes, pit containing ox, and upright stones bounding north side



Fig. 2. Central pit with hollow in filling, and central stone removed to one side

the normal round-barrow type. The newly found curving walls, however, seemed to be reminiscent of the horns of a long barrow and suggested an amalgamation of two types. In 1929, therefore, the greater part of the time was directed to the study of the arrangement and purpose of these encircling walls.

Earlier observers had noticed certain upright stones projecting above ground-level, and a preliminary examination was made in 1926 of the four that were then visible, viz. no. 34 and *f, j, and n*.

No. 34 was over 7 ft. long, was planted upright and flanked on either side by dry walling connecting it with two other upright stones. The section of the wall thus revealed was followed in both directions, only the upper part of the outer faces being exposed sufficiently to allow of their positions being accurately plotted, the result being that a complete circle (no. 2) composed of upright stones linked by walling was added to the plan of the monument. In places where the tops of the stones were at a greater depth below the surface, they were crowned by continuous rough walling (pl. 1, fig. 2).

The examination of the circle was resumed in 1929 when several sections were cut (pls. LV and LVI), one in the north-western sector (no. 1), two others on the main axis (nos. 3, 5 and 6), and a fourth south of the entrance parallel to the main axis (no. 4). These sections proved that a circular or slightly oval ditch had been cut, having as its approximate centre the spot covered by the central stone. The average width and depth of this ditch were 17 ft. and 6 ft. respectively. In it were set two lines of uprights, the average length of the outer stones (circle 2) being 7 or 8 ft.; the inner (circle 3) about half that size. In none of the sections did the bases of the stones of either circle reach the bottom of the ditch, but they were wedged in position with extreme care by means of large stones packed in clay. In sections 1 and 2 the gravel in the bottom of the ditch was stained black, suggesting that fires had been lighted there, but in no case was there any trace of silting such as would be expected had the ditch been left open for any length of time. Moreover, as it had been cut in the gravel, a very few days' exposure to the weather would have caused the collapse of the sides. The surface of the inner slope, however, had been 'rendered' by a continuation of the layer of purple clay which apparently covered almost the whole of the interior area not occupied by the chamber and passage; this 'rendering' had been scorched by fire in places.

Except at the entrance the puddled clay and stones completely enveloped the inner ring of uprights and on the inner side almost reached the level of the top of the stones forming the outer one (pls. LI, fig. 1, and LV). The uprights of the outer ring were connected by rough walling to a depth of from 2 to 3 ft. down from their tops; the inner ring had no walling, except at the entrance where the

last 4 ft. 6 in. on the S. side, and 6 ft. 6 in. on the N. side were formed by the small dry-built incurving walls already mentioned.

Although the evidence from only three sections cannot be conclusive, it suggests that the smaller circle was considerably reduced in height in its course from the front to the rear of the monument.

The certain deduction seems to be that both circles had a purely ritual significance, and that there was no intention to leave them exposed for any length of time except at the entrance. It is in fact certain that the inner of the two was never exposed, but that the stones were placed in position in the course of setting the filling in the ditch behind the outer circle. The stones of this circle (2) must also have been set up at the same time and in much the same manner, as they do not reach the bottom of the ditch; in this case, however, there is a probability that about 2 ft. 6 in. of the outer faces may have been left exposed for a very short time after the ditch itself had been completely filled. Two facts point to this: the change in the character of the filling (as indicated in the sections), and the use of dry walling to connect only the upper parts of the uprights. Although careful search was made, no evidence was found to suggest that there was anything like a pathway round the circle at any level. A small deposit of human cremated bones was found in a cavity immediately behind stone 29.

It is quite inconceivable that the ditch should have represented an earlier monument adapted for the purpose of a tomb, unless it had been entirely re-cut.

Both circles rose gradually up out of the ditch as they approached the passage (pl. LI, fig. 1): this fact must have been much more apparent originally as the tops of the stones of the outer circle flanking the entrance have been completely smashed away by the modern destroyers (pls. XLVII, fig. 1, and LIV, fig. 1, and see p. 193).

The extra care bestowed on the construction of the entrance—the dry walling is noticeably better made of more carefully chosen stones than elsewhere—suggests that it was intended to be the scene of ceremonial. The aim of the recent work of preservation has been to leave it as nearly as possible as it appeared on the occasion of its final ritual use as an entrance to the tomb.

Further study of the design brought to light a very surprising fact. To a spectator standing without the outer passage the monument appears to have a perfectly symmetrical arrangement of four converging walls, all terminated at the portal by upright stones (nos. 18, 19, 20, and 21; pls. XLVI, fig. 2 and LIV, fig. 1). Analysis of the plan, however, reveals a very different position (fig. 1).

Of the four stones 18 alone has one side disengaged; it terminates the

inner circle on the south side, and if this circle be followed clockwise round the circumference no. 19 is reached, balancing no. 18, but unlike it linked with a neighbouring upright no. 15, which in its turn forms part of the main wall of the inner passage. This end of the inner circle therefore is continuous with the north wall of the passage. This wall runs on without a break, curving round to form the chamber, and returning as the south wall of the passage, to complete the circuit of the monument at stone 16. This stone, however, is linked with 20, and so with the outer circle; the line of walling therefore runs without a break twice round the monument. It does not even terminate with stone 17, but is continued by the clay-set wall to a point on the face of stone 9 just short of the chamber itself.¹ In fact the two 'circles' may be considered as together forming a gigantic spiral, in which is a loop comprising the passage and chamber.

If, then, the whole inner area of the monument enclosed by the ditch is a 'holy place', the burial chamber is in it but not of it, being completely shut out by the 'loop' in the spiral.

THE INNERMOST CIRCLE (4)

In continuance of the examination of certain stones projecting above the surface of the mound at some distance from the chamber, when no. 34 had been proved to form part of circle 2, attention was directed to three others which were subsequently identified by the letters *n*, *j*, and *f*.

n, of which the top only was visible (pl. LI, fig. 2), was found to be 8 ft. long and to be set on end leaning away from the central point of the monument at an angle of 45 degrees, carefully packed by stones set in clay in such a manner that it could not conceivably have slipped from an upright position or have been displaced by the destroyers. Apparently the stone and its packing were placed in a pit; in the illustration the rule is leaning against one straight side, the opposite side was sloping. There was no opportunity of completely examining this pit, and no similar one was observed elsewhere. It was clear that the surface of the mound as eventually completed would have been 6 ft. or more above the highest point of the stone. Three inches from its outer face, and 4 ft. 3 in. lower than the summit of the stone was a deposit of burnt bones representing the complete cremation of a young person, probably a girl of between eight and ten years of age.

The next stone to be examined, *j*, was only just visible. The inner face was exposed and it was found to be an upright of hard schist, now only

¹ The wall has a definite termination here, and could not have been continuous with the bench within the chamber.

3 ft. long, its upper part having been destroyed. It was apparently set in a level area of purple clay 3 in. thick. In this floor, 3 ft. from the south-east corner of the stone, was a hollow about 2 ft. in diameter and 1 ft. deep, in which was set a small upright stone about 15 in. long,¹ and cremated bones representing the nearly complete remains of a young person just cutting the last wisdom teeth, perhaps a girl of about 15; above lay a number of quartz stones (pl. LV, section 1). The basin appeared to have been lined with small flat stones, and was probably the site of a fire.

Another 'basin' was found up against the north-east corner of the stone. This was empty save for a few fragments of charcoal. This basin also appeared to have been burnt. Here, again, were found white quartz pebbles, broken as usual, together with fragments of the upright *j*.

Stone *f* was much larger and more irregular than *u* or *j*; like the former it proved to have been set at an angle of 45 degrees leaning away from the centre of the monument (pl. LIII, fig. 2). It was 7 ft. long. No cremated bones were found, but under its heel resting on natural soil were about three layers of quartz and other rounded pebbles.

In 1929 a more detailed examination of the inner area was undertaken to discover the purpose and relationship of the three stones just described, and also the extent and nature of the great ditch in which the circles 2 and 3 were set.

Mr. D. W. Phillips assisted in this work for some weeks and was responsible for the cutting of the two main trenches, assisted by Mr. R. S. Simms, who gave his services throughout the season's work.

One trench was sited so as to include stone *j*, the other ran along the main axis of the monument, and here was discovered the site of another stone, *h*, belonging to what was now ascertained to be the inmost circle (no. 4). In this case the destroyers had completed their work, and only the fragments of a schist stone remained in the socket which was inclined outwards at an angle of about 45 degrees (pl. LV, section 2). The fragments were scattered for some distance westward, suggesting that the stone had been shattered when the level of the soil was slightly lower than at present.

Trenches were now cut down to the level of the clay floor at a number of places where it was expected that the remaining stones of the circle were likely to have stood, as time and money would not allow the complete uncovering of the inner area. In most of the comparatively small areas exposed, patches of the clay floor were found to have been scorched, and stones were found laid upon it in groups, but no regular arrangement could be detected,

¹ It is likely that the stone was phallic. Mr. T. Lethbridge has since (July 1930) discovered a similar stone 8½ in. long set in a small pit in a hut on Gateholm Island (*Arch. Camb.*, 1930, p. 370).



Fig. 1. Pattern stone before removal; stone 3 on right and small packing blocks between (perpendicular view)



Fig. 2. Pattern stone, underside

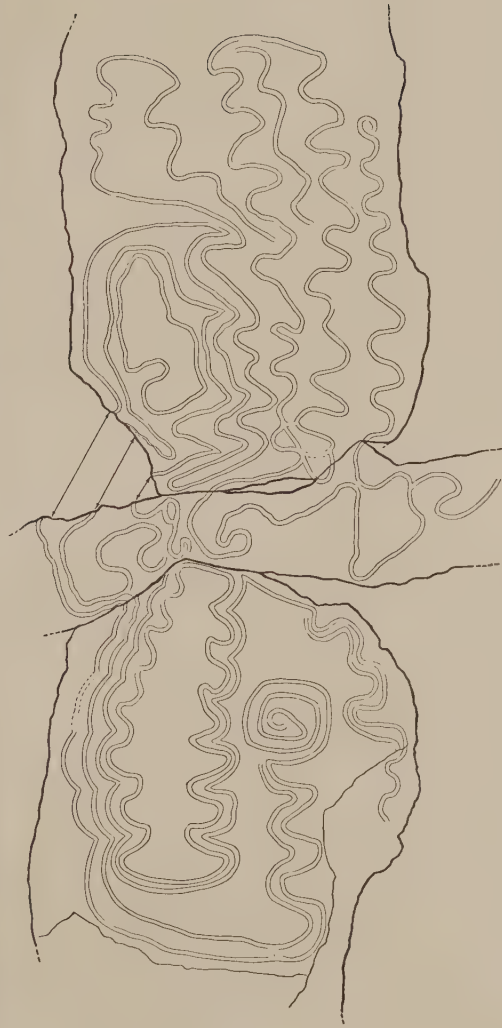


Fig. 3. Diagrammatic drawing of Pattern stone showing continuity of design (1, 2)

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Fig. 1. Site of Pattern stone; adjoining clay floor partly cleared and stopping against packing stones in centre behind pegs, but still covered by filling on left. Note imprint of other stones of filling on exposed floor. The right-hand peg is driven into the bed on which rested the foot of the Pattern stone



Fig. 2. Circle 2 opposite stone *d* with walling between and upon uprights

and it was assumed that they formed the lowest course of the superincumbent cairn.

In some cases the stones of circle 4 or their sites were located without difficulty; either stumps were found in position, or the holes in which they had stood passed through the clay floor, which was found at the same level over the whole of the western part of the area. The relative positions of the stones, however, were not constant either in their distances from one another or from the centre of the mound.

Mr. Newall, who was assisting in the work at this stage, made the discovery that if lines were drawn on the plan connecting certain of the stones already exposed on opposite sides of the monument, these lines crossed the central stone at precisely the same point (fig. 1). By following this clue it was a comparatively easy task to recover the plan of the 'circle', which was found to have consisted of fourteen members: twelve monoliths, one stone which had always been prostrate, and one group of smaller stones, while there was no trace of the fifteenth stone (*l*) which would have balanced *c*, and so completed the sequence. Considered as a circle the stones were quite irregularly spaced both in relation to their neighbouring monoliths and their distance from the centre; but they were placed with great accuracy if regarded as pairs connected by imaginary lines crossing the pit under the central stone.

Stones *f*, *j*, *h*, and *n*, have already been described.

The remaining members were:

a, The stump of an upright of schist.

b, A small pile of about a dozen stones.

c, The broken fragments of a grit stone inclined outwards.

d, A thin, badly smashed slab of schist, about 4 ft. 6 in. wide, inclined outwards.

e, A hole containing fragments of schist inclined outwards.

g, A hole only, 1 ft. deep, and two packing blocks; no evidence of inclination.

i, A hole only, 1 ft. 10 in. long by 1 ft. wide and 1 ft. 3 in. deep, in which was found one fragment of burnt human tibia; no evidence of inclination.

k, The stump of a stone 2 ft. 5 in. long and scarcely piercing the clay, but propped so as to incline outwards; at its foot one cremated bone was found, a human cochlea.

l, Neither stone nor hole was found.

m, A hole only.

o, A large irregular slab 4 ft. 9 in. long and 2 ft. 9 in. wide, which had always been prostrate; no hole was found under or near it.

It is also noteworthy that stones *g*, *h*, and *i* have no opposites, *h* being on the main axis which crossed the central stone, while in the case of *g* and *i*

connecting lines crossing the central point would be intercepted by uprights nos. 3 and 2 of the chamber. Very careful search was made for any evidence of the two missing opposite stones, but no trace was found. As a matter of fact the line joining *f* with *o* is just cut by the edge of upright no. 3, and that joining *j* to *a* is similarly cut by upright no. 2.

THE PURPLE CLAY FLOOR

Purple clay resembling that of which the floor was made may still be found on the shores of the Menai Straits in the limestone district.

The partial examination of the inner area by means of the various trenches suggested that the floor extended over the whole of the part lying to the west of a line drawn at right angles to the axis at the entrance from the passage to the chamber, with the possible exception of the immediate neighbourhood of the chamber itself. Eastwards of this line the evidence was not so clear, and any systematic exploration was impossible owing to the amount of material already heaped in position around and above the passage and chamber before the existence of the floor was suspected.

At the point where this imaginary line reaches the ditch on the southern side, the clay was found to stop abruptly where it was just overlapped by the first of three large stones which were found lying side by side, radiating from the centre of the monument. The largest stone was just under 5 ft. long. Two were of grit, the third, nearest to the passage, of schist (pl. LII, fig. 1). No similar arrangement of stones was found elsewhere and an additional peculiarity was that each had been broken in two; the fact that in every case the two portions were still fitted together suggested that the breaking was deliberate. It is certain that their position had not altered since the construction of the cairn, i. e. that their condition and disposition were in no way due to the activities of the destroyers. Possibly it was caused in each case by the stone being dropped upon another stone, but it would be strange if the same accident happened to three stones immediately adjacent.

It was also noticed that at this point the filling of the inner side of the ditch, so far as its upper layers were concerned (no more were examined), consisted of loose stones without the usual admixture of clay. Similar loose stones covered the area immediately eastwards of the three recumbent stones, the body of the cairn being here preserved to greater height than elsewhere on this side.

Another portion of the central area was exposed in section 3. Here again the clay was found lining the inner slope and on the lip, but the evidence was not so clear in the trial hole made on the opposite side of the passage in an attempt to locate a monolith opposite stone *g*.



Fig. 1. Circles 2 and 3 south of entrance. Stone 30 on left. Stones of circle 3 dipping down under filling of ditch



Fig. 2. Stone *n* from west. Note packing blocks against wall of pit on left



Fig. 1. The three broken recumbent stones by *b*



Fig. 2. Area south of portal. Inner slope of ditch. Part of filling remains on which rests circle 3 (stones 18 and 20 and walling connecting them). Bead found in bottom left-hand corner



Fig. 1. Outer side of stones 5 and 3; packing blocks *in situ*

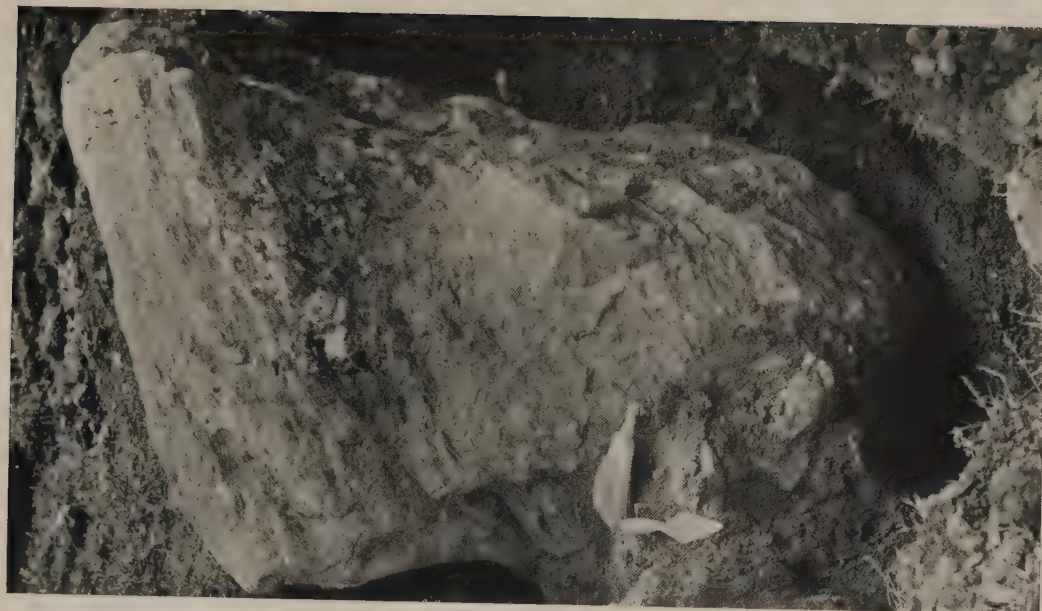


Fig. 2. Stone *f*, radial view

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Fig. 1. View along axis of forecourt ; stones filling post-holes in foreground. Note dry walling of circle 3 adjoining stone 18



Fig. 2. Portal, circle 2, and forecourt from south

By the time the floor had been discovered it was too late to ascertain its relation to any other uprights of the chamber and passage than no. 3, but it was possible to follow it for a short distance in the direction of stone 5, where it was found to stop against packing stones placed round the outer face of the upright (pl. I, fig. 1). This alone suggests that the chamber was completed before the floor was laid down. It was not noticed in any of the excavations made for the insertion of the concrete uprights against the outer face of stones 2, 4, and 5, although many packing blocks were found—the contrast in the condition here with the outer face of 3 was very striking. The series of photographs of these excavations shows no trace of the floor, and could scarcely have failed to do so had it existed (pl. LIII, fig. 1). It is quite certain that it was laid down after both upright no. 3 of the chamber and the pattern stone were in position, as it actually touched both of them, and it is almost certain that it overlay the site of the central stone, covering as it did the whole area westwards, up to about 2 ft. of that stone; but when the stones here were cleared away the existence of the floor was not suspected, and the ground appeared to have been disturbed previously down to a level below that of the floor. By the time it had been recognized, the modern retaining wall had been built on the south side with its foundations carried down below the level of the floor.

THE PERISTALITH, CIRCLE I

The main evidence for a peristalith is Rowlands's description and drawing; and the probability that there was one—which, on the analogy of New Grange, etc., might well be expected in such a position—is much strengthened by the occurrence of a large stone hole at the edge of the spread of the original mound. The discovery was a chance one made during the cutting of a shallow trench. A slight loosening of the gravel was found which could only be detected by feel. The filling was removed, leaving a well-defined hole, 4 ft. 6 in. deep. Small flat stones were found lining the hole in places as if packed in beside an upright. Suspicion that it might be due to the removal of a natural boulder was almost entirely removed by the discovery of a few fragments of charcoal at the bottom.

Attempts to locate other holes with a bar were fruitless, and there was no opportunity for any systematic excavation.

THE OUTER AREA

The time available allowed of very little examination of the areas outside the ditch, except the forecourt and its immediate neighbourhood, and the results

were negative—or inconclusive. All that was established was the concentration of larger proportions of stones in certain places, and one group of boulders of some size, as indicated on the trench plan (pl. LVI). These lay just outside the line of the ditch to the north of the entrance, and there was nothing to suggest that here or elsewhere there was anything but waste material used up for the final heaping up of the cairn.

A heap of stones, apparently casual filling, which proved barren on examination, was found piled outside and against the stones of circle 2 opposite stone *f* of circle 3.

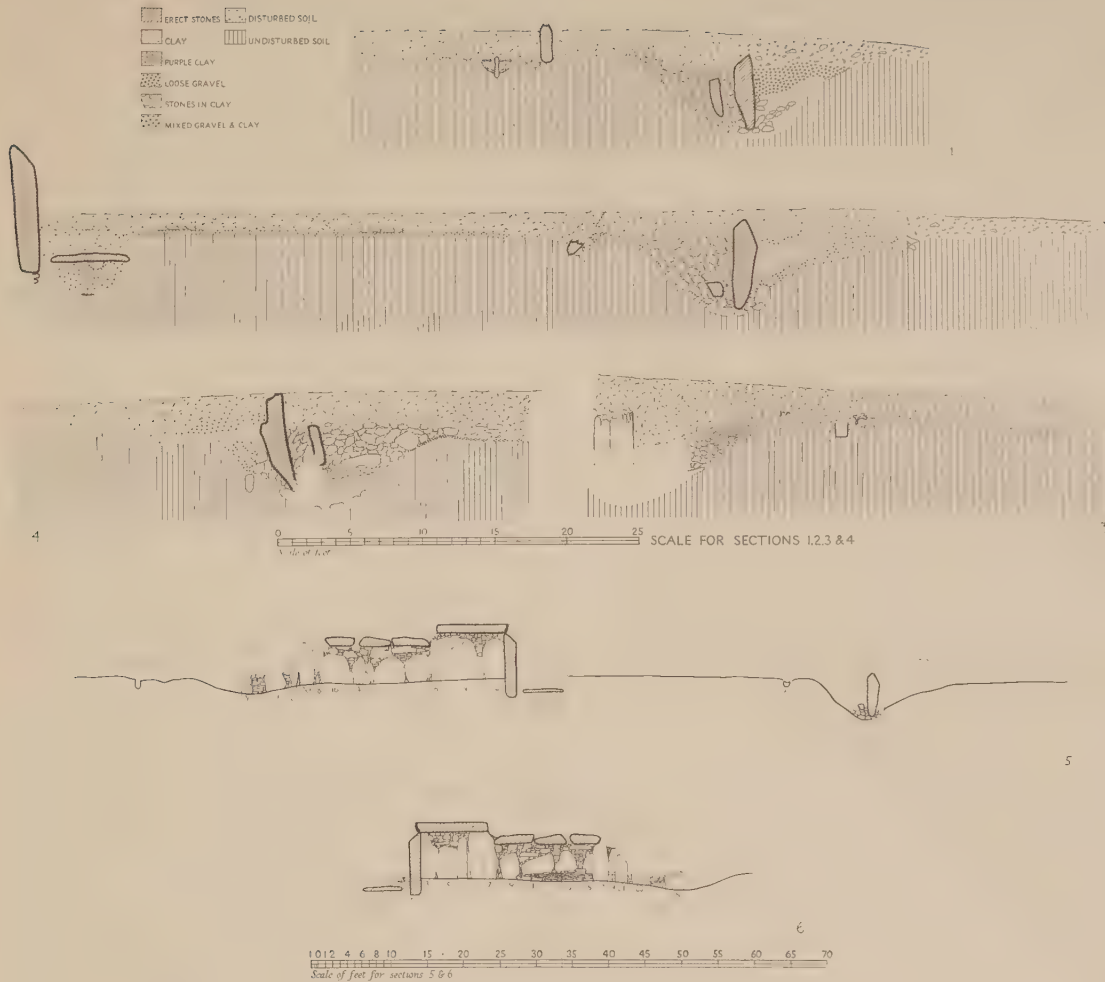
THE SEQUENCE OF THE CONSTRUCTION OF THE MONUMENT

The relative positions of the central stone, the pattern stone, and upright no. 3 are of great importance in any attempt to recover the sequence of events in the construction of the monument.

The sequence in the central area appears to have been as follows: (1) the sinking of the central pit; (2) the scorching of it; (3) the deposition of the hazel and the cremated bone; (4) the laying down of the brown clay layer; (5) the filling of the pit with stones and clay; (6) the insertion of the purple clay cone into the filling; (7) the use of the hollow in the clay; (8) the laying down of the central stone; (9) the erection of upright no. 3; (10) the placing in position of the pattern stone, followed by (11) the erection of the chamber; (12) the laying of the clay floor. Then there would have been the ceremonial use of the floor—whatever that may have been—and finally the covering in by the completion of the cairn.

It is conceivable that the first action was the erection of stone no. 3, but this is improbable, as no packing stones were found outside the upright such as occur outside all the others it was possible to examine. Also, unless the chamber had been completed and the upright held in position by the cover-stone, it would have had to be propped, and props would be likely to hamper the use of the area in question. There would also be the danger of undermining the upright, which is a very large one, weighing about 20 tons, and only sunk a short distance in the soil, had the pit been made after its erection. Its lowest point is only 2 ft. 9 in. below the level of the chamber floor and 2 ft. above the bottom of the pit, which is no more than 1 ft. away.

It is also possible to suggest a sequence for the erection of the uprights of the chamber, namely that 3 was first placed in position, and that it must have been set up from the eastern side, and therefore before the erection of any other stones of the chamber; while 4 and 7 were in position before 2, 5, and 6 were set up. It is also likely that 8 and 9 (and therefore the rest of the passage) were erected after 6 and 7 were in position.



Sections. Note: in section 1 the two pits at the foot of stone *j* have been moved a few inches to bring them into the section. The actual bottom of the ditch was not reached. In section 4 the actual bottom of the ditch was not reached. The break in the outer slope of the ditch was possibly due to a prop used to support stone 30 while it was being packed in position

With this local sequence as a basis it is possible to suggest the following order for the erection of the tomb:

1. The central pit and ceremonial connected with it.
2. The erection of the chamber and the inner passage and portal which preceded—
3. The digging (or at any rate the completion) of the ditch, for practical reasons, as the difficulties of transport, etc., would have been much greater had the ditch existed when the great stones were assembled and erected, even if a causeway had been left for a time.
4. The erection of circle 4.
5. The laying and ceremonial use of the clay floor.
6. The setting of the circles 2 and 3 in the ditch and linking them with the portal.
7. The burial and attendant ceremonies.
8. The closing of the tomb and attendant ceremonies.
9. The erection of the cairn.
10. The erection of the peristalith (which might, however, have been set up at any earlier stage).

BULK

The amount of material moved was considerable. Assuming that the cairn was 12 ft. high and 160 ft. in diameter, the cubical content would have been about 2,500 yards, and the weight say 4,000 tons. There are also the contents of the ditch to be added, say another 850 tons. These figures are the minimum, as the cairn was probably more than 12 ft. high; an extra 2 ft. would have added about 550 tons.

As is almost invariably the case in the western areas of Britain, there is no sign of pits from which the material is likely to have been obtained.

ORIGIN OF THE STONES

Dr. Edward Greenly, F.G.S., of Bangor, kindly examined the greater number of the stones of the chamber, passage, etc., and reports that all are of local origin—grit stone, of which a quarry exists in the next field, hornblende schist, which outcrops a few yards from the site—or such as would normally be found in the local glacial moraine which forms the soil on which the monument stands, such as mica schist and glaucophane schist.

FIRE

The mark of fire was everywhere. Apart from the larger deposits of cremated bones and small fragments which were often found, charcoal was

ubiquitous, while patches of scorching were found wherever the purple clay floor was exposed, both on the level central area and on the inner slope of the

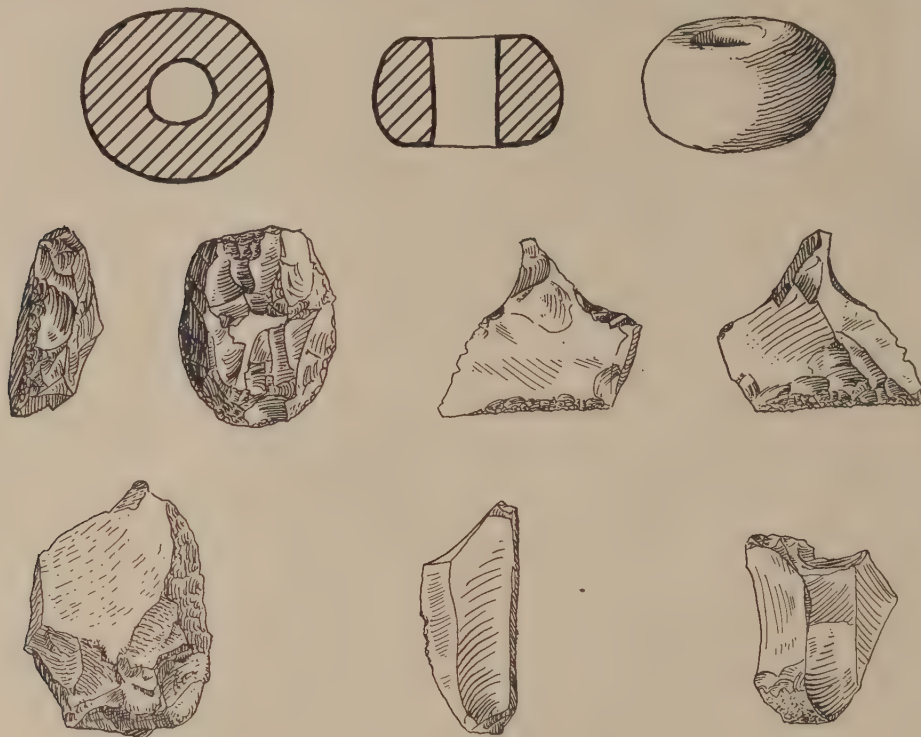


Fig. 2. Stone bead and flints. ($\frac{1}{2}$)

ditch. The bottom of the ditch also was blackened and the outer slope scorched. Two considerable paved 'hearth' flanked the entrance.¹

STONE BEAD

The solitary object showing human workmanship found during the excavations—flints and quartz excepted—was a bead of stone (fig. 2). It was found resting on the crest of the inner slope of the ditch 5 ft. 8 in. from the southern face of stone 20. Nothing was found with or near it, and it was apparently lost by one of the builders. It shows a small amount of wear on the outer edge of the two sides due to the friction of its neighbours on a string. Dr. Greenly reports that it 'is composed of some sort of soft volcanic mudstone with

¹ Evidence of fire has been recorded on many other similar sites, e. g. by Mr. Coffey at New Grange (*loc. cit.*, p. 14); it was observed at Capel Garmon (*Arch. Camb.*, 1927, p. 24) and at Belas Knap and other Cotswold Long Barrows (*The Long Barrows of the Cotswolds*, pp. 79, 133, 142), while the 'vase supports' found in La Hougue Bie also show marks of fire.

minute white mica, and (I think) a little chlorite. Most of it seems to be kaolinized felspar and some minute quartz. The composition is quite usual in mudstones'.

FLINT

Between fifteen and twenty flakes of flint or chert due to human action were found scattered over the area of the monument, mostly casual finds; none was of much importance or datable with any degree of accuracy.

The best are drawn in fig. 2.

Flint does not occur locally except on some not very distant sea-shores. Artifacts are found in some numbers in a field which has long been cultivated on the neighbouring farm of Holo Gwyn.

QUARTZ

White quartz was found all over the site, usually water-worn pebbles which had been deliberately broken. In a few places definite deposits of them had been made, e.g. in the filling of the passage. They were not found, however, placed at the foot of any of the circles, as they were round the internal wall at Capel Garmon. The presence of such pebbles has been noted on a number of Bronze Age and other early sites.

JASPER

As recorded, two noticeably large fragments of brilliant red jasper were found in the filling of the central pit; small pieces abound on the site, but no others so large as these.

SHELLS

Fragments of cockle, scallop, and winkle shells were found on the original floor of the passage; limpets (by Capt. Lukis) in the chamber; and oyster shells, one of the latter in the soil covering cap-stone C, and another just outside the entrance 2 in. above the floor-level. Both were probably contemporary with the cairn.

FURTHER WORK

The clay floor should be completely exposed.

A careful clearance of the whole area surrounding the forecourt might provide further evidence of value. The extent of the floor of clay which led to the causeway is still unknown.

The peristalith should be further explored, and the position of other stones established.

The causeway crossing the ditch was not examined. It was desirable to be in possession of all available information before disturbing the passage

floor at this point, and in the end time would not allow the beginning of what might have been a long and difficult examination. There can be no doubt that the ditch was continuous in some form, even if only as a trench in which to plant the uprights flanking the entrance to the passage.

The area between circles 1 and 2 should also be examined. The extent and purpose of the ditch, apparently concentric with the lesser cairn, has yet to be determined (p. 212).

DATE

The complete absence of pottery adds to the difficulty of dating; but perhaps the middle of the second millennium B.C. may be suggested as the most probable period.

OBSERVATIONS

It may be claimed that the results of the examination, although in some ways inconclusive, provide abundant evidence of an elaborate funeral ceremonial. At present it is very obscure, but further light may be obtained from the exploration of cognate monuments.

Such definite facts as the structural features help to establish the relationship, near or remote, of the great body of funeral monuments of a certain type, caves, cairns, and barrows in Western Europe, although comparison with monuments such as New Grange, Carrowkeel, Lough Crew, La Hougue Bie, and certain of the Brittany tombs which possess obvious affinities is difficult, since none has been so completely explored as Bryn Celli Ddu, except as to the contents of the chambers, but a similar origin may be assumed.

The ritual antechamber, which is a constantly recurring feature in megalithic tombs, is decadent at Bryn Celli Ddu, although still clearly recognizable.

Other features are more uncommon: the combination of two circles with the walls of the chamber to produce an unbroken line of walling in the form of a spiral seems to be unique.

The complete burial with extreme care of the two circles in a ditch, the bottom of which is apparently not reached by the longest stones, also seems to be a hitherto unrecorded event, although the small slivers of stones placed upright in the ditch surrounding the Ysceifog barrow may reflect the same tradition.¹

It should be noted that the centre line of the ditch lies exactly half-way between the centre and the circumference of the monument, while its extreme width occupies one-fifth of the radius of the circle. It is also significant that the circumference of the principal circle (no. 2) is approximately 90 yards,

¹ Dr. Cyril Fox, *Archaeologia Cambrensis*, 1926, p. 80.

which is one of the 'stock sizes' most frequently used by the builders of British round barrows.¹

The 'bench' in the chamber and the clay-set wall in the passage have their counterpart as to the chamber in the cairns at Unstan and Taversoë Tuick in Orkney, and possibly, but with much less certainty, as to the passage, in the rock-cut tombs of Mallorca.

The evidence of Bryn Celli Ddu suggests that some, if not all, of the British megalithic tombs were not intended by their builders to be reopened, and that the presence of a number of bodies indicates human sacrifice rather than communal use.²

The irregularity of the disposition of the stones of the innermost 'circle' and their arrangement in pairs are noteworthy, and further instances are likely to be forthcoming.

The deliberate outward inclination of some of these stones, which could not have been due to the pressure of the cairn, strengthens the probability that some of the cairn circles where the stones are inclined outwards may have been originally so built.³

It is certain that the pillar stone had no structural importance, but whether it is a phallic emblem surrounded by a symbolical serpent in the form of the two circles, or whether it represents the dolmen goddess, must be for others to decide. The plan suggests that it stands in a recess especially designed to house it, and the flattening of two of its sides just allows of passage between it and the adjoining walls of the chamber.

It seems as though the monument embodies a medley of ceremonial practice derived from various sources, as well as two distinct structural systems: the long grave (cave, *allée couverte*, barrow, cairn) with its antechamber; and the circle (grave, temple, and whatever else it may be). These two types of grave existed together at the same time, both in the Mediterranean⁴ and in Scotland, where at Camster, in Caithness, there is a large round cairn covering a chamber, approached through a passage and antechamber, and surrounded by a circle, and a few yards away a precisely similar chamber, antechamber, passage, and circle in the centre of a long cairn with horns at head and foot. At Carrowkeel, also, in Sligo, long and round cairns occur together, and were proved by their contents to be contemporary.

¹ W. J. Hemp, *Bulletin of the Board of Celtic Studies*, i, p. 355.

² Dr. Thurnam records that in a large proportion of the long barrows he opened, many of the skulls were cleft, sometimes one only was not so (*Archaeologia*, xlii, 185); and see O. G. S. Crawford, *The Long Barrows of the Cotswolds*, pp. 25 and 75.

³ e. g. Carn Llecharth, Llangyfelach, see *Arch. Camb.*, 1920, p. 367.

⁴ Nils Åberg, *La Civilisation Énéolithique dans la Péninsule Ibérique*, p. 20, and W. J. Hemp, *Archaeologia*, lxxvi.

THE LESSER CAIRN

Closely adjoining the cairn is the base of a second, the upper part having been completely removed. The site was excavated in 1930 by Mr. R. S. Newall

and Mr. T. Lethbridge, when it was found that the original floor had been dug into, modern objects being found below the original ground-level. At or very near the centre was a small stone cist, containing a cremation only. This was probably the primary burial. Fragments of burnt bones and small flint flakes were found amongst the disturbed material of the old floor of the cairn.¹

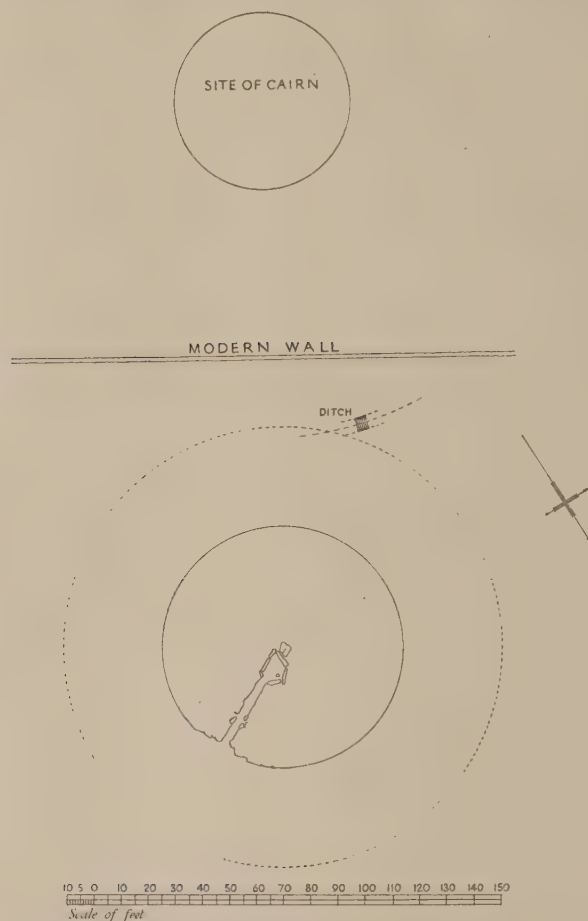


Fig. 3. Diagrammatic plan showing the position of the lesser cairn relative to the main monument

DITCH

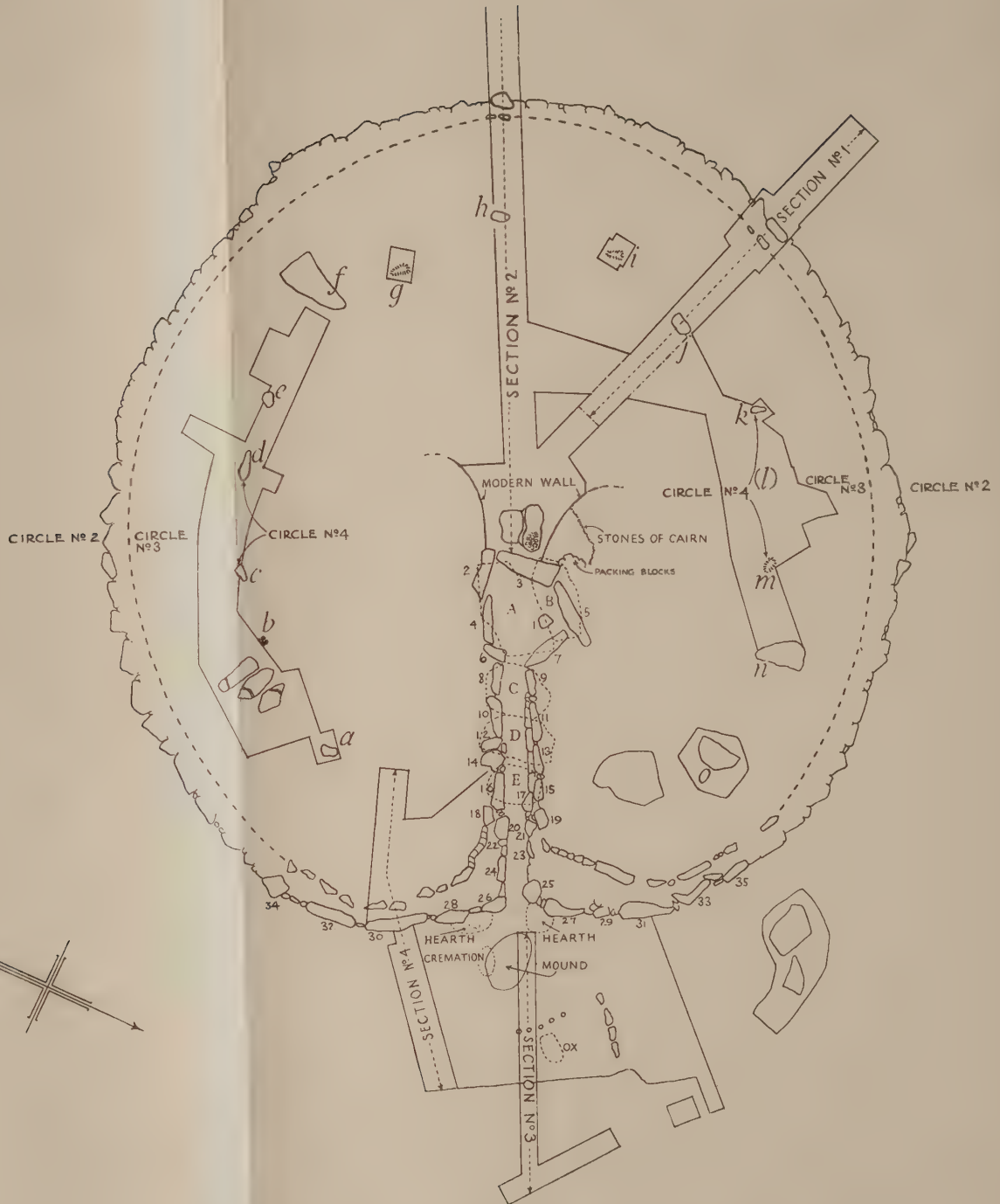
One of the trial pits sunk when searching for the holes of circle 1 of the main cairn revealed a short section of ditch just without its base (fig. 3). There was no opportunity of examining more than a short length, but it appeared to be concentric with the second cairn and to have no relation to the principal monument.

ACKNOWLEDGEMENTS

The list of those from whom help was received is a long one, headed by a number of members of the secretarial and executive staffs of H.M. Office of Works, on whose kindness and forbearance continual drafts were made throughout the five years during which the labours in the cause of this particular monument continued.

Other debts are owing, first to the field workers, especially Mr. R. S. Newall and Mr. D. W. Phillips, without whom it would not have been possible to complete the task; and secondly, to the subscribers to the fund raised under the auspices of the Anglesey Antiquarian Society, which has enabled the purely

¹ A full account of the excavation will be printed in *Archaeologia Cambrensis*.



Scale of feet

Trench Plan. Note: the unnumbered stones of circle 2 in several places, especially in the western area, represent dry-walling crowning the uprights as first exposed. Subsequently, in 1930, the outer faces of individual uprights were uncovered and remain exposed

archaeological side of the work to be carried out with a fullness which is prohibited to the Ancient Monuments Department by the provisions of the Ancient Monuments Act.

It would be invidious to mention individual subscribers, but it is possible to refer with gratitude to the Council of the Society of Antiquaries, to the members of the Windmill Hill Exploration Staff, and to the anonymous donor of a subscription earmarked for the employment of ex-service men.

Sir Arthur Keith was kind enough to examine the human bones, Dr. J. Wilfrid Jackson and Mr. C. Bryner Jones the ox bones, and Dr. Greenly and Mr. Horace Beck the stone bead. Dr. Greenly also reported on the stones composing the cairn.

The plan of the monument was begun by H.M. Office of Works draughtsmen, and was continued with sections by Messrs. L. Monroe and S. Piggott, of the Royal Commission on Ancient Monuments in Wales and Monmouthshire. Mr. Piggott also drew the flints and bead.

Finally, the sustained interest of the owner, the Marquess of Anglesey, whose action in offering the custody of the monument to H.M. Commissioners of Works initiated the exploration, was a great encouragement to the workers.

APPENDIX I

THE OX BONES

By DR. J. WILFRID JACKSON

The limb bones of the ox from this site all suggest a larger and more robust animal than the small Celtic ox (*Bos longifrons*). Remains of the latter were common in the Early Iron Age sites of Glastonbury,¹ All Cannings Cross,² and Swallowcliffe Down,³ but on an earlier occupation site, Woodhenge,⁴ probably Early Bronze Age, the ox remains indicated a much larger animal with longer horns. The limb bones of the Bryn Celli Ddu ox agree very closely with those from Woodhenge. Unfortunately the upper part of the skull and the horn-cores are missing, and the remaining portions of the skull are too badly smashed for purposes of comparison. The lower jaws and teeth, however, are a little smaller than examples from Woodhenge. Beyond the fact that the remains resemble those found at Woodhenge there is nothing to indicate their age. The absence of associated pottery or other objects, and the proximity of a farm-house to the site of their discovery, suggest the possibility of a recent burial. The bones on which this report was made are preserved at the Manchester Museum. [The remainder were buried on the site, at the west end of the trench shown in section 4.]

¹ *The Glastonbury Lake Village*, vol. ii, 1917, pp. 641-72.

² *The Early Iron Age Inhabited Site at All Cannings Cross Farm, Wiltshire*, 1924, pp. 43-50.

³ *Wilt. Arch. and Nat. Hist. Mag.*, vol. xliii, pp. 91-3.

⁴ *Woodhenge*, 1929, pp. 64-8.

APPENDIX II

Mr. H. A. Hyde, Keeper of the Dept. of Botany in the National Museum of Wales, kindly examined the wood from the central pit, on which he reports as follows:

‘The wood was in the form of small fragments and was so far advanced in decomposition that it resembled a very brittle cheese. I was, however, able to cut hand sections of one large fragment with a razor and to determine it as hazel (*Corylus avellana*). This species is an undershrub or small tree common in oak woods throughout England and Wales.’

Mr. Hyde also reported as follows on the wood from Post-holes nos. 1 and 2:

‘Many small fragments of carbonized wood, the largest 1 in. long and $\frac{1}{8} \times \frac{1}{8}$ in. in cross-section, were submitted, and in addition from Post-hole no. 2, flakes of bark, stated to have been derived from the sides of the hole.

‘The fragments of wood were either broken across or split cleanly along the grain, and the fractured surfaces so obtained were examined microscopically by reflected light. All the specimens proved to be pine, the diagnostic characters of which may be clearly observed by using this method.

‘The occurrence of pine wood at Bryn Celli Dhu is of exceptional interest. It has long been known that this tree was of widespread occurrence in England and Wales in Neolithic times, the evidence for this being derived from submerged forests and peat bogs (vide Reid, C., *Origin of the British Flora*). Few specimens of pine, however, have been identified from well-dated sites in England¹ and none previously in Wales.’

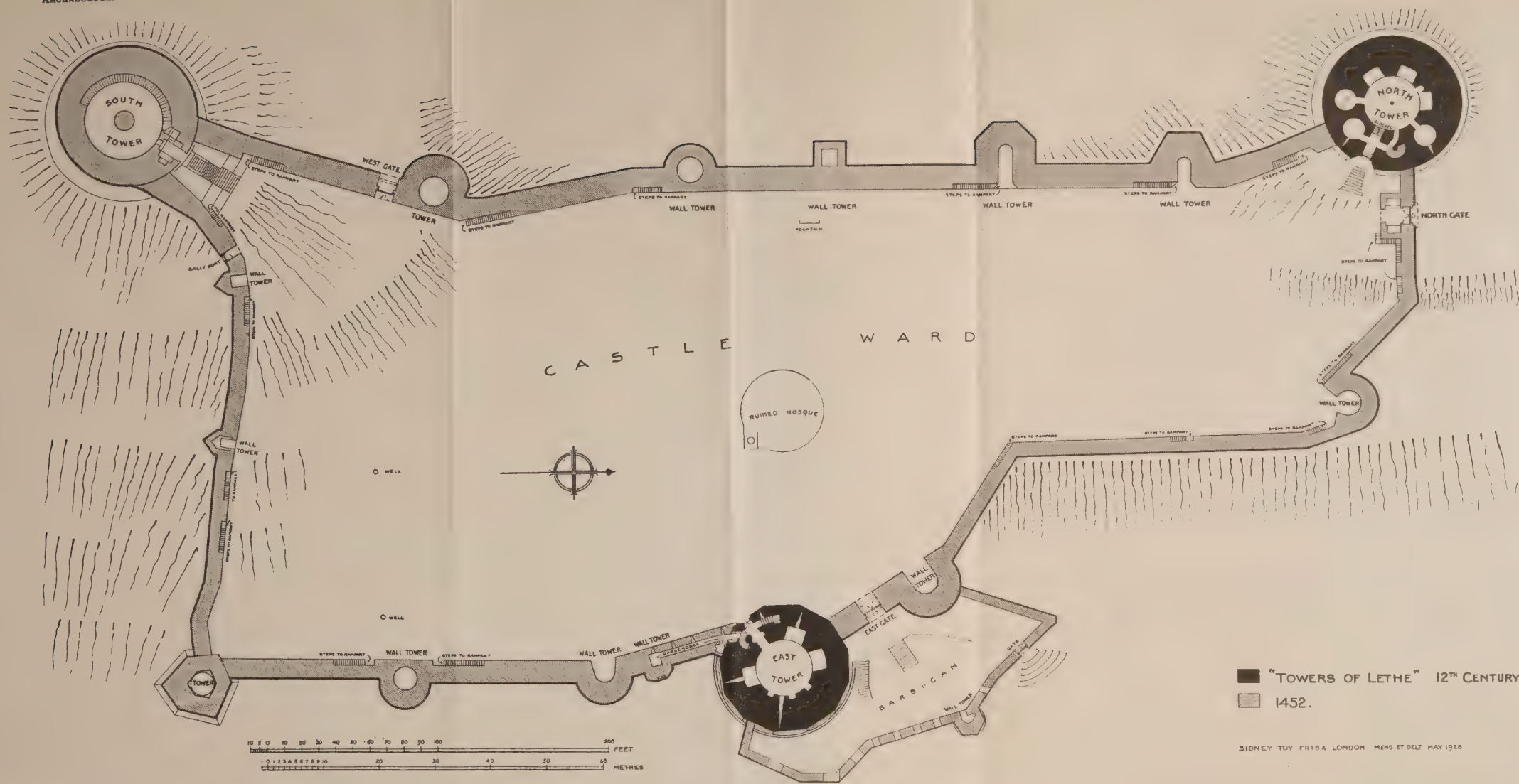
Mr. Hyde also examined microscopically many fragments of charcoal from different parts of the site and identified the following:—Hawthorn (*Crataegus Oxyacantha*, L.), hazel (*Corylus avellana*, L.), pine (*Pinus sylvestris*, L.), blackthorn (*Prunus spinosa*, L.), and oak (*Quercus robur*, L.). He particularly noted the ‘extraordinary abundance’ of hazel.

¹ Those known to Mr. Hyde are referred to in the following publications:

(1) Lyell, A. H., in *Excavations at Hengistbury Head, Hants*; Report of Research Committee of the Society of Antiquaries 3 (1915), p. 20.

(2) Lyell, A. H., in *Excavations at Wroxeter*; Report of Research Committee of the Society of Antiquaries 4 (1916), p. 66.

(3) Woodhead, T. W., in *Woodhenge* by M. E. Cunnington, 1929, p. 74.



ROUMELI HISSAR. PLAN OF CASTLE.

Published by the Society of Antiquaries of London, 1930.

VIII.—*The Castles of the Bosphorus.* By SIDNEY TOY, Esq., F.S.A., F.R.I.B.A.

Read 12th December 1929

WHEN Constantine the Great transferred the seat of his empire from Rome to Byzantium he not only preserved that empire from destruction, but he established it at a centre from whence it derived new life and energy. Menaced by the barbarians from the north and the Persians from the east, the empire was in constant danger of overthrow. Now it is often of the greatest importance rather to anticipate an attack than to await its onslaught, rather to be ready for your enemy near his gates than to await his arrival at yours. Constantine therefore removed his base of operations nearer to the source of danger and established himself at the very gate of his enemies. At New Rome new conditions of life had to be faced; new methods of building, suitable to the climate, the skilled labour, and to the materials available, had to be devised. But in the very solution of these difficulties lay the germs of salvation. By his bold and sagacious action a new life and vigour was infused into his people, a new force which not only preserved the empire for over eleven hundred years, but maintained a progressive civilization during what was probably one of the darkest periods in the history of the world. But it was in the selection of the particular site that the emperor showed the greatest prescience. At Byzantium he commanded the great line of communication between east and west through Asia Minor and Thrace, and also controlled the maritime passage between the Euxine and the Propontis, the Straits of Bosphorus. He secured at once the most potentially wealthy and the most strongly situated position in Eastern Europe.

Standing on a promontory which juts into the mouth of the Bosphorus, and is flanked on the north by the Golden Horn and on the south by the Sea of Marmara, Constantinople has powerful natural defences. But it was a primary concern of Constantine and his successors to augment these natural defences by fortifications. The Byzantine acropolis, at the eastern end of the promontory, was already fortified, its walls having been rebuilt by Septimius Severus after his systematic destruction of them, A.D. 196. But the space enclosed was far too small for Constantine's requirements, and he therefore built a long wall across the peninsula considerably west of the acropolis, and enclosing about five times the area. By the beginning of the fifth century the city had grown so much in population and increased so greatly in wealth that it became necessary

both to extend its boundaries and to strengthen its defences. In 413 Theodosius II built a double wall still further west, extending from the upper reaches of the Golden Horn to the sea of Marmara. This great fortification, repaired and in some places altered by later emperors, consists of two lines of curtain walls, strengthened by towers every sixty yards, and protected on the outside by a deep moat. It formed a powerful bulwark of defence against the attacks of successive invaders, and even now, shattered by earthquake and neglected, it is one of the most imposing and inspiring sights of its kind extant. A single wall of various periods of construction was carried round the city along the shores of the Golden Horn and the Marmara from the north end of the great wall to the south.

From an early period it must have become apparent that some greater command of the Straits of the Bosphorus was necessary than could be exercised at Constantinople itself. The Bosphorus is a maritime river with a surface flow from the Black Sea to the Sea of Marmara of from $2\frac{1}{2}$ to 5 knots. It pursues a sinuous course of about 19 miles in length, and from half a mile to two and a half miles in width. At the narrowest point, about seven miles north of the city, two castles were built, one on either side of the straits. These were known as the Castles of Europe and of Asia respectively, and still retain those names. Roumeli Hissar, on the European shore, is built on the precipitous slopes of a natural hollow scooped out of the side of a hill. Anadolu Hissar stands on level ground at the mouth of the Aretas, now called the Sweet waters of Asia (fig. 1). It was near this part of the Bosphorus that the troops of Darius crossed by a bridge of boats in 500 B. C.

In the course of time it was realized that further control of the Straits, nearer the entrance from the Black Sea, was necessary. Raids on the city by nations occupying the littoral of the Black Sea were being made continuously. From the middle of the ninth to the middle of the eleventh centuries four naval attempts were made by the Russians alone. And although these raids were successfully repelled by the skilful employment of Greek fire, it became clear that a more permanent check was desirable. At a point five miles south of the Cyanean rocks, known to the ancients as the Straits of Hieron or the Sacred way of the Bosphorus, the opposite coasts approach each other in high promontories. The summits of these promontories were formerly occupied by temples, that of Serapeion on the European side and of Hieron on the other. On or near the sites of these temples castles were built, one on either shore. Walls were carried down from the castles to moles jutting into the water. This secured complete command of the Bosphorus. It enabled the Greeks both to intercept hostile approach to their city and, from the post at Hieron, to levy dues on all boats navigating the straits.



Fig. 1. Roumeli Hissar. From the Bosphorus



Fig. 2. Roumeli Hissar. The south tower and south wall from within the Castle



Fig. 2. Roumeli Hissar. The north tower and adjoining walls from within the Castle



Fig. 1. Roumeli Hissar. The west wall and north tower from within the Castle

The history of these castles is very obscure. Beyond bare references the Byzantine chroniclers make little mention of them until the Ottoman conquest.

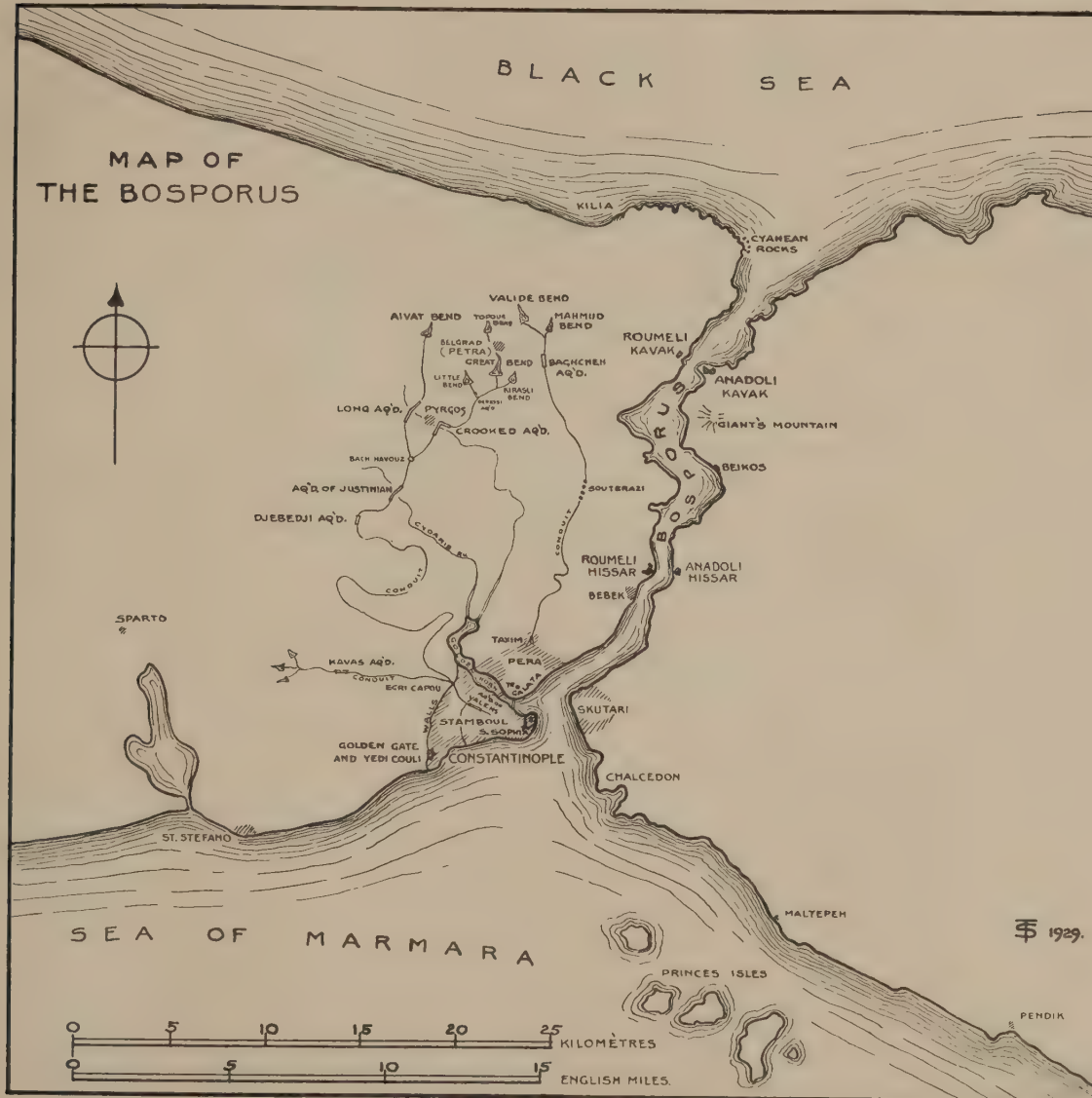


Fig. 1. Map of the Bosphorus.

At Roumeli Hissar were the great Byzantine prisons known as The Towers of Lethe or Towers of Oblivion, a name itself suggestive of obscurity and powerful construction. These towers were taken in 1452 by Muhammed II, who proceeded immediately to raise an extensive fortress on the spot in

preparation for his siege of Constantinople. The elaborate preparations made by the Sultan for building the castle are described by Ducas, a Byzantine historian writing about 1460.¹ Ducas's account is certainly picturesque, but as is to be expected of an opponent writing from a discreet distance, it is not innocent of defects. None the less it has been minutely copied by later writers. It appears that 3,000 workmen supplied the labour, and that the neighbouring Byzantine buildings, as well as the quarries and forests of Anatolia, furnished the materials for the work. Ducas ascribes each of the three great towers to one of the grand Vizirs Halil Pasha, Zaganus Pasha, and Saridja Pasha. The castle was completed in three months.

Actually the castle is built of blue limestone, quarried locally, ironstone from Kavak and the Princes Islands and granite from Panderma on the Sea of Marmara. That the ruins of neighbouring churches supplied some of the material for the curtain walls there is abundant evidence. It is very probable also that the castle of Roumeli Kavak, destroyed by Muhammed II, furnished further material. Of the three great towers only one, that on the south, was built at one period. In each of the others the lower part is of a much earlier period than the upper portion, and is of a totally different character. There is no direct communication between the great towers and the rampart walks on either side. A Turkish village of old timber houses now stands within the castle.

The plan of Roumeli Hissar is roughly oblong, though the curtain walls, taking advantage of the natural ridges, pursue a sinuous course from tower to tower (pls. LVII and LVIII, fig. 1). Towards the north an escarpment falls back from the water's edge, and the curtain being carried along the ridge of the escarpment, the lateral walls are here closer together. It is very probable that when the castle was built the sea went in to the foot of this escarpment. Where severe attack was to be expected, as along the level of the sea shore and on the land side west of the castle, the walls are 16 ft. thick and the wall towers are strong and numerous. On the other two sides, defended naturally by precipices on the north and a rapid declivity on the south, the walls are 9 ft. thick; there is only one wall tower on the north and two small ones on the south. The walls vary in height from 40 ft. to 50 ft. The wall towers are of all manner of shapes and designs; but generally at strategic points, such as near the gateways or at sharp angles, they are stronger and larger than elsewhere. In the important position at the south-east angle of the castle the tower takes the form of an irregular hexagon with sharp angles pointing south and east. All these wall towers communicate directly with the rampart walk, and, except where a

¹ *Duca Michaelis Nepotis Historiae Byzantinae Cap. XXXIV.*

precipitous break in the walk occurs, as in the north wall and the northern portion of the west wall, the communication is either through or across the tower to the walk on the other side. Communication between the rampart walk and the castle



Fig. 2. Roumeli Hissar: East Gate from without.

ward is established by stairways at frequent intervals (pls. LVII and LIX, fig. 1). There are three gateways, one near the Bosphorus beside the great east tower, one near the north tower, and one in the southern portion of the west wall. That near the Bosphorus is defended by a barbican, which probably jugged at one end into the water when first built, though now the whole stands back from the water's edge (pl. LXIV, fig. 2). There are three lower arches here through which entrance to the barbican could originally be obtained by boat. Each of the three gateways was defended by a machicolation, and the double-leaved door itself by a heavy timber bar, but there was no portcullis (fig. 2 and pl. LXII). The north gate is extended internally to form a guard post. There is a small sally port in the south wall near the south tower.

The north tower is 33 ft. 6 in. in diameter internally, its walls are 23 ft. 6 in. thick, and it rises to a height of 120 ft. above the ground (pls. LXIII, LXV, LXVI). It is built of coursed stone-work throughout its height, but the lower

portion is of superior masonry to the upper. The roof is a brick dome with a stone key. The entrance is on the ground floor, and is defended by a machicolation, operated from the third floor. The actual doorway both of this and of the east tower was altered in 1452. Beyond the doorway a straight passage led directly into the interior of the tower, but the inner end of the passage has been blocked save for a narrow deflected loophole. There is a doorway on either side of the passage, that on the left leading to a circular wall chamber, and that on the right to a newel stairway. At the foot of the stairway a rough tunnel has been driven through the masonry to form an entrance to the interior of the tower in place of that from the passage. Doubtless the interior was used as a prison, and the change of position of the entry to it was effected to make escape more difficult. The stairway ascends to the fifth floor, the level of the original rampart walk of the tower. Its newel is 2 ft. 6 in. in diameter, and is built of brick $1\frac{1}{4}$ in. thick with 1 in. joints. The stone steps rest upon a spiral vault, also of brickwork. Beyond the fifth floor the ascent to the present rampart walk is by straight flights of steps. There are chambers in the thickness of the wall on most floors near the stairway, and most floors are provided with fireplaces and garderobes. On the ground floor and the second, third, and fourth floors, there are deep recesses 11 ft. 6 in. wide, opening on to the central chamber. In the upper stages rays of indirect light were admitted through narrow loops pierced obliquely through the wall into the recesses. Even these are now blocked and the darkness is complete. On the ground floor the recesses have neither loops nor fireplaces. On the ground floor, also, in the thickness of the wall, are three circular, domed chambers 12 ft. 6 in. in diameter and 17 ft. 6 in. high. Two of these have narrow loopholes, now blocked, but I have been unable to trace any light to the third. Another such chamber, but more lofty, rises from the level of the third floor to a height of 26 ft. 6 in. The only approach to this chamber is from the stairway by a short passage which enters the chamber abruptly near the dome. On the fifth floor, where the Turkish work begins, the character of the plan is entirely changed. The chambers of this and the sixth floor follow the lines of the twelve-sided wall which rose inside the rampart walk. On the outside of the tower may be seen the lines of the original parapet (pl. LXIII, fig. 1).

The timber flooring in this tower, throughout all its stages, is still in position (pl. LXVI). In the centre of the ground floor is a complete Byzantine stone pillar. Otherwise the central supports are of wood, though Byzantine capitals, inverted, are used as bases in some of the upper stages. From the fifth floor the timber work, while supporting the sixth floor, also forms the centering for the brick dome above. In order to permit of resilience in the centering, the weight is carried obliquely across the fifth stage, and there is no central post. The com-

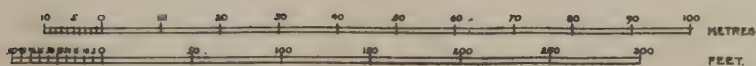
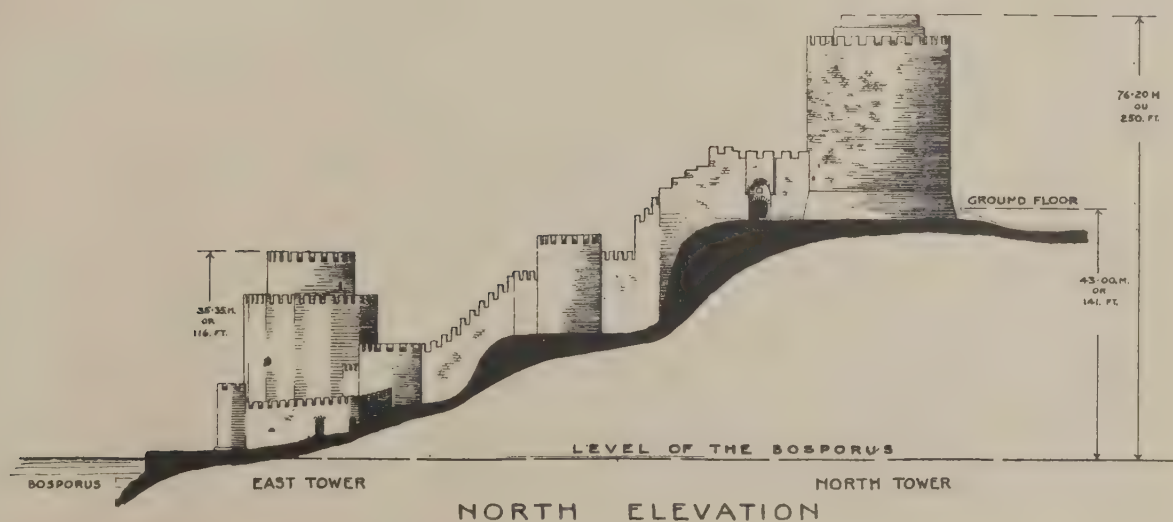
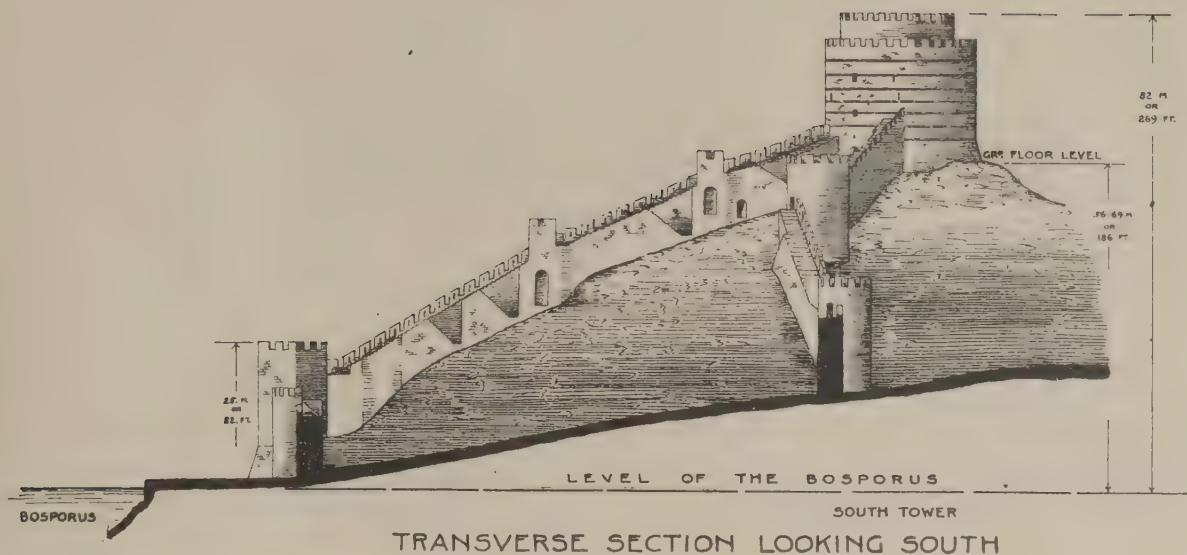
plete centering is still in position, though the upper boarding is now $1\frac{1}{2}$ in. from the brickwork of the dome. It is not to be supposed that the whole of the timber flooring is intact. Many of the boards have fallen away completely, others are supported only at one end or are decayed and treacherous. Added to this the whole is in total darkness. A warning note must therefore be given that although these menacing conditions may rather attract than repel the enthusiast, a false step would unquestionably lead to serious results.

Precisely for what purpose and at what period the lower portion of this tower was built it is difficult to determine. Its size is enormous. In this respect the keep of Pembroke, one of our largest circular towers, is comparatively insignificant. Round towers for military purposes were built frequently by the Romans and the Byzantines after them. But the character of this building is most unusual. The domed mural chambers and the large recesses opening on to the interior strongly suggest prison cells, while the lofty mural chamber rising from the third floor has a still more sinister significance. Having ascertained the depth of this chamber from the opening near its head, I examined carefully the inside face of the tower at its floor level for traces of an opening, but found none. The floor of the chamber could not have been at a lower level because there is a passage and a recess beneath. Considering the position of the only opening to the chamber, where there is no sort of a barrier, and from which there is a drop of 18 ft. into utter darkness, the name oblivion as applied to this tower seems to have had point. The north tower with its chambers and recesses and its wide rampart walk suggests at once a prison and a fortress, and it is probable that both the north and the east towers filled that double rôle. The north tower was probably built by one of the Comneni in the early part of the twelfth century. Its design agrees in every particular with the severe character of the rulers of the empire during that turbulent period. A tower of Athos built by Alexius Comnenus has a stairway of similar design to the one here. The east tower is probably slightly later in date. The junction of the curtain walls with this tower, where there is no intercommunication, may be compared to that at Yedi Couli built by Muhammed soon after the taking of the city. In the latter case the tower and walls form one building and the intercommunication is complete.

The east or Bosphorus tower (pls. LXIV, LXVII) is of similar dimensions, and in some degree of similar design to the north tower. Here, however, the external face is multangular: there are generally three recesses on each floor in place of two and the stairway is of different type. The tower stands directly upon a rock foundation, and is built of ashlar to the height of the original structure; beyond this it is of coursed rubble. Here, again, the lines of the original parapet can be traced on the outside face (pl. LXIV, fig. 2). The entrance

is on the first floor, and must have been approached by external steps formerly, but the soil has been raised against the tower on this side to the height of the threshold, and the doorway itself was altered in 1452. The Byzantine stairway ends at the height of the original rampart walk, now the fifth floor. Access to the Turkish continuation was on the other side of the tower across this floor, and since there are no floors in this tower at present and no roof, my investigations had to be pursued by scaling the walls on the outside and attacking the problem from above. No suitable single ladder could be procured, but after a delay of several days I obtained the loan of three short ladders and a pair of steps. With the assistance of local labour, these were tied together first hoisted on top of the curtain wall, and from here placed against the tower. The top of this rather unsteady arrangement came to within about 4 ft. from the parapet. This I could climb. I found that here again the character of the building is entirely changed above the line of the original parapet. The stairway consists of a single flight of steps following the circular face of the inner wall of the old rampart walk. It has a segmental brick vault, which at the upper end of the stairway still retains the original timber centering. Both this tower and the adjoining sea wall were armed by the Turks with artillery.

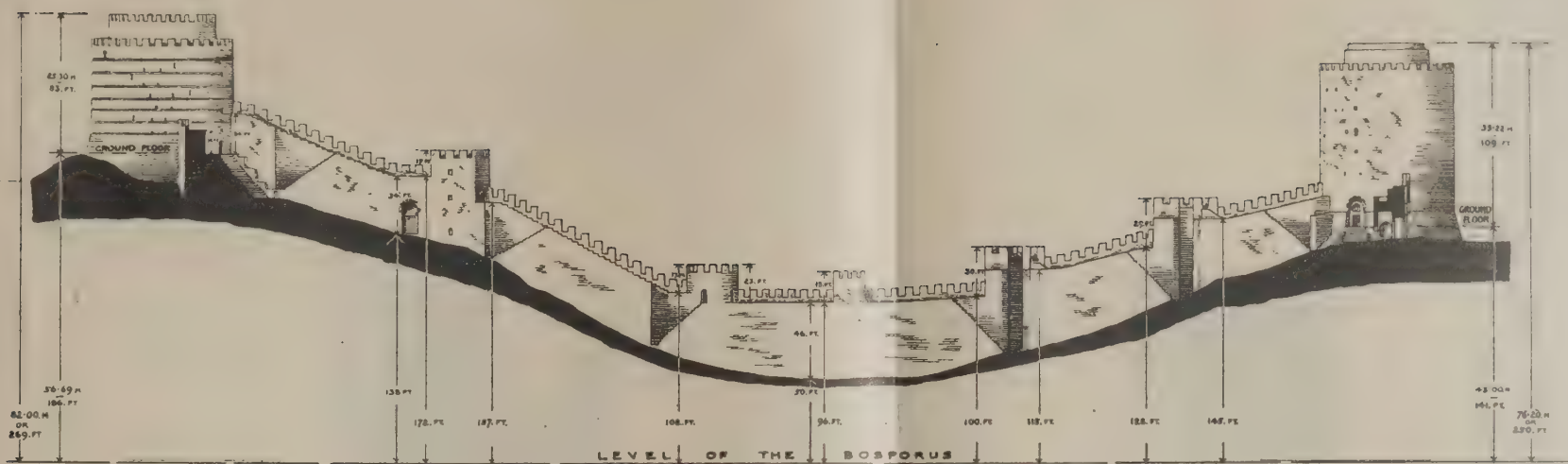
The south tower stands on an outcrop of rock on the crest of a steep bank (pls. LVIII, LXVIII, LXIX). It differs entirely from the other two both in construction and design, and can only be compared to them in point of size. In this respect the builder was evidently determined to equal if not surpass them. The wall is much thicker on the west, from whence attack might be expected, than on the east, where the rapid fall of the ground forms a natural defence. This also allowed an extensive fighting space at that part of the rampart walk where it would be most needed. The tower is built of stone, with brick lacing courses at about 6 ft. intervals, the lacing courses being from three to five bricks in thickness. A rapid rise, now four steep flights of steps, leads to the entrance. Here the doorway opens into a vaulted porch with deep recesses on either side and over the doorway a small window gave light to the porch when the door was closed. After the first few steps leading to the inside of the tower the stairway rises spirally on the inner face of the wall from the porch to the rampart walk, opening directly to each floor in its course. A pillar of masonry 11 ft. 9 in. in diameter at the base and about 70 ft. high formed the central support for all the floors, and the roof. This pillar is still in position, though the floors and the roof have disappeared. The wall chambers are confined to three small look-outs, in vertical line on the south-east of the tower, and two larger chambers in vertical line over the porch. The windows pierce straight through the walls of the tower and are relatively wide. There are garderobes on all the first



SIDNEY TOY, F.R.I.B.A. LONDON. MEAS. ET DELT. MAY 1928.

ROUMELI HISSAR.

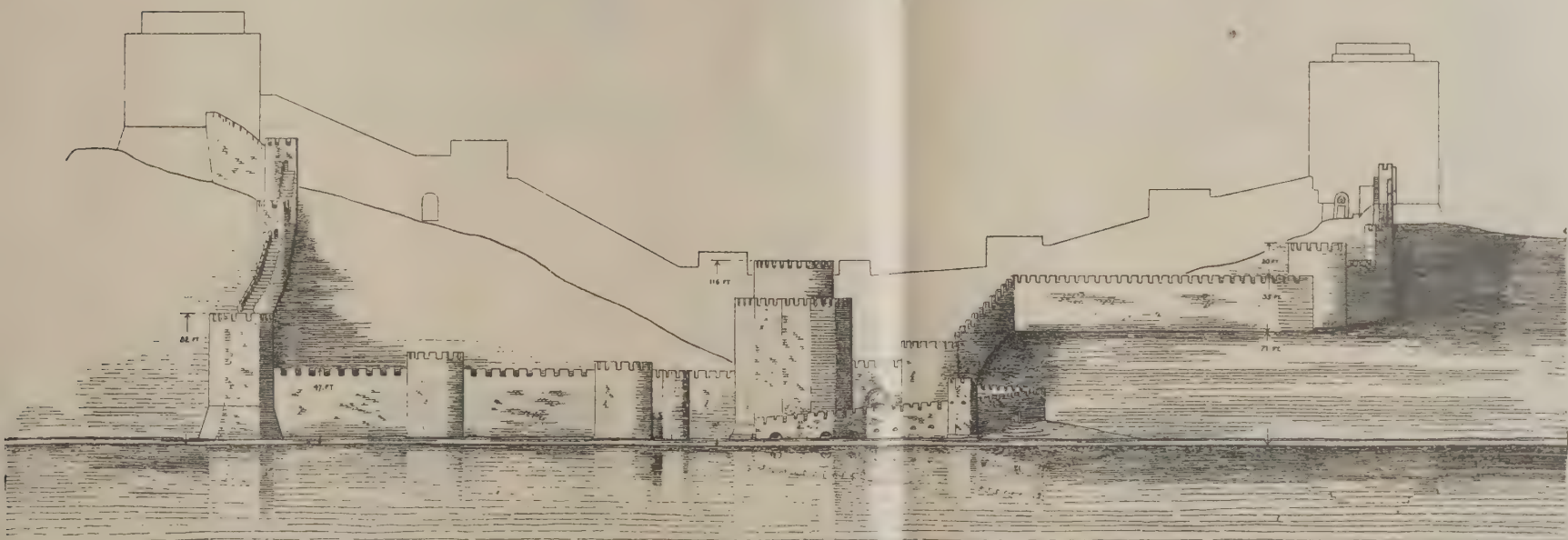
Published by the Society of Antiquaries of London, 1930



SOUTH TOWER

LONGITUDINAL SECTION LOOKING WEST

NORTH TOWER

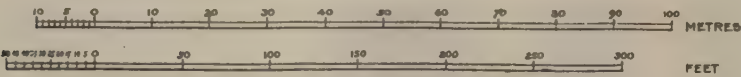


ANGLE TOWER

EAST TOWER BARBICAN

ANGLE TOWER

EAST ELEVATION

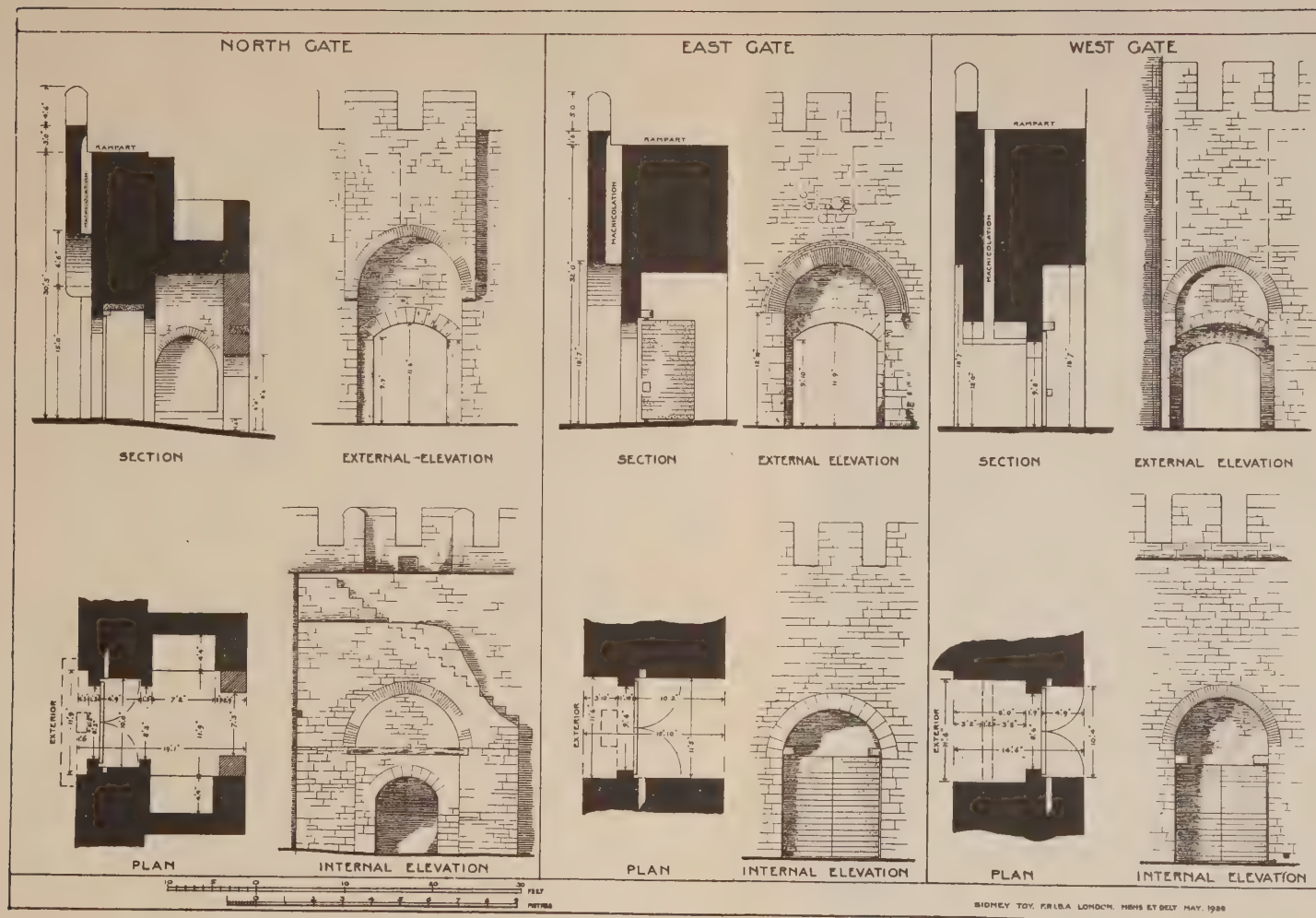


MONEY TOY, P.R.I.S.A, LONDON, MEMS, ET DELT MAY, 1922.

ROUMELI HISSAR.

The west wall from within the Castle and the east wall from the Bosphorus.

Published by the Society of Antiquaries of London, 1930.



ROUMELI HISSAR. The Gateways.

three floors, and there is a liberal provision of fireplaces throughout. On the fourth floor there are seven fireplaces. This tower was evidently designed for military purposes alone, and provided accommodation for the staff and the defensive forces. An inscription in Arabic is built into the wall over the entrance doorway. It is in two parts to this effect:

‘The great Sultan and Khakan Muhammed son of Murad Khan ordered the building of this fortress and of the strong high tower. His sovereignty was preserved for his honoured servant and his great Vizir Zoghnos Pasha son of Abdullah, and its completion was accomplished in the month of Rejeb in the year 856.’¹

The first part of this inscription is significant as to what the Sultan ordered to be done, ‘the building of this fortress and of the strong high tower’, one tower only being mentioned. It is possible that the work of heightening the other towers was entrusted to Halil Pasha and Saridja Pasha respectively.

One of these three towers, I think undoubtedly the north tower, continued to be used as a prison after the Turkish conquest, particularly for the accommodation of the more important prisoners. On account of its gloom, its strength, and its painful associations, it was known as the Black Tower. The prospect of being confined here was regarded with great aversion, even by those who had already undergone excruciating and prolonged suffering in captivity. About 1594 Baron Wencelas Wratislaw, a young Bohemian nobleman, was incarcerated here, and on his release, which was accomplished through the mediation of the ambassadors of England and France, he wrote an account of his experiences. He had been sent to Constantinople by his relatives under the care of the Austrian Ambassador in order, as he says, ‘to gain experience and see Eastern countries’. He seems at least to have gained experience.

About a year after his arrival at Constantinople, the Ambassador having been accused of espionage on the Turks—justly it would seem—the whole staff of the Austrian embassy was arrested. Wratislaw, though ill, was treated with great cruelty, and with many others was thrown into prison. Here all were linked together by iron chains, two and two, and suffered intense agony from disease, foul conditions, and want. After he had endured the horrors of this prison and had served in the Turkish galleys, where the prisoners were chained to the oars they worked, he hears that he is destined for the Black Tower. He says, ‘that prison is called the grave of the living, because the prisoners stay there as in a grave, and never come out again. We fervently besought the Lord God that we may be released from that very terrible tower’. However, to the tower he went, and spent two full years there with twenty-five other

¹ i. e. in the month between 22nd March and 22nd April A. D. 1452.

² *Adventures of Baron Wencelas Wratislaw, 1599*, translated by A. H. Wratislaw, 1862.

unfortunates huddled together in one dark chamber, inside an oak cage, such he says 'as is used for wild animals', and closely guarded. In a chamber of the fifth floor of the north tower there is still a powerful oak grill which may have formed part of the cage referred to; and scratched on the wall of an adjoining garderobe are several names, including that of 'Wencelius Wratislaw' in late sixteenth-century script.

As illustrative of the close guard kept over the prisoners Wratislaw states that some time before his arrival several prisoners had effected their escape from the tower by the stratagem of two of their number. The Governor of the tower and all the guards on watch on the day of the escape were promptly hanged in the fortress. Another governor was appointed, and warned that the same fate awaited him if guilty of the same offence. Further light is thrown on this point by an Englishman, George Sandys, who visited the Bosphorus in 1610. Sandys¹ says, 'on the European side standeth a castle called formerly Damalis, and now the Black Tower, strongly fortified and commanding that entry with the help of the other on the opposite shore, environed with a wall two and twenty feet broad and containing three great towers, their walls exceeding three yards in thickness. This is also a prison for captives of principal quality. At such time as our deservedly beloved Mr. Barton lay here Ambassador for our nation, there was a certain Hollander named Hadrian Cant, who being taken by a renegade, then captain of two galleys, was by the grand Seignors Commandant shut up in this place, they expecting great matter for his ransom. Where after he had remained three years, arising one morning before day and finding the doors open, he descended without the privy of his keepers to the court of the castle. When advising with himself of his escape and casting his eyes about him he found a rope that was tied to a tree not far from the wall, which he ascending by the benefit thereof without danger descended on the other side, and from thence conveyed into the house of our ambassador, then, as now, a sanctuary for escaped prisoners, where for three days they hid him under a wood stack, and not long after shipped him for Holland. In the morning the captain of the castle having vainly sought his prisoner, filled forthwith a coffin with clay and caused it to be thrown into the Bosphorus, giving out that he was dead, affrightened with the punishment of his predecessor being hanged for the escape of a certain nobleman of Germany committed to his custody.'

Suffering, like pleasure, must be in a large degree relative. Baron Wratislaw's description of his experiences in the first prison reveals conditions of life so painful and revolting that one would suppose he had little to fear from any other prison. Still, even here, he enjoyed certain privileges he felt would be

¹ *A Relation of a Journey begun An. Dom. 1610*, by George Sandys, London, 1670.



Fig. 1. Roumeli Hissar. The north tower



Fig. 2. Roumeli Hissar. The north tower and north wall from the Bosphorus

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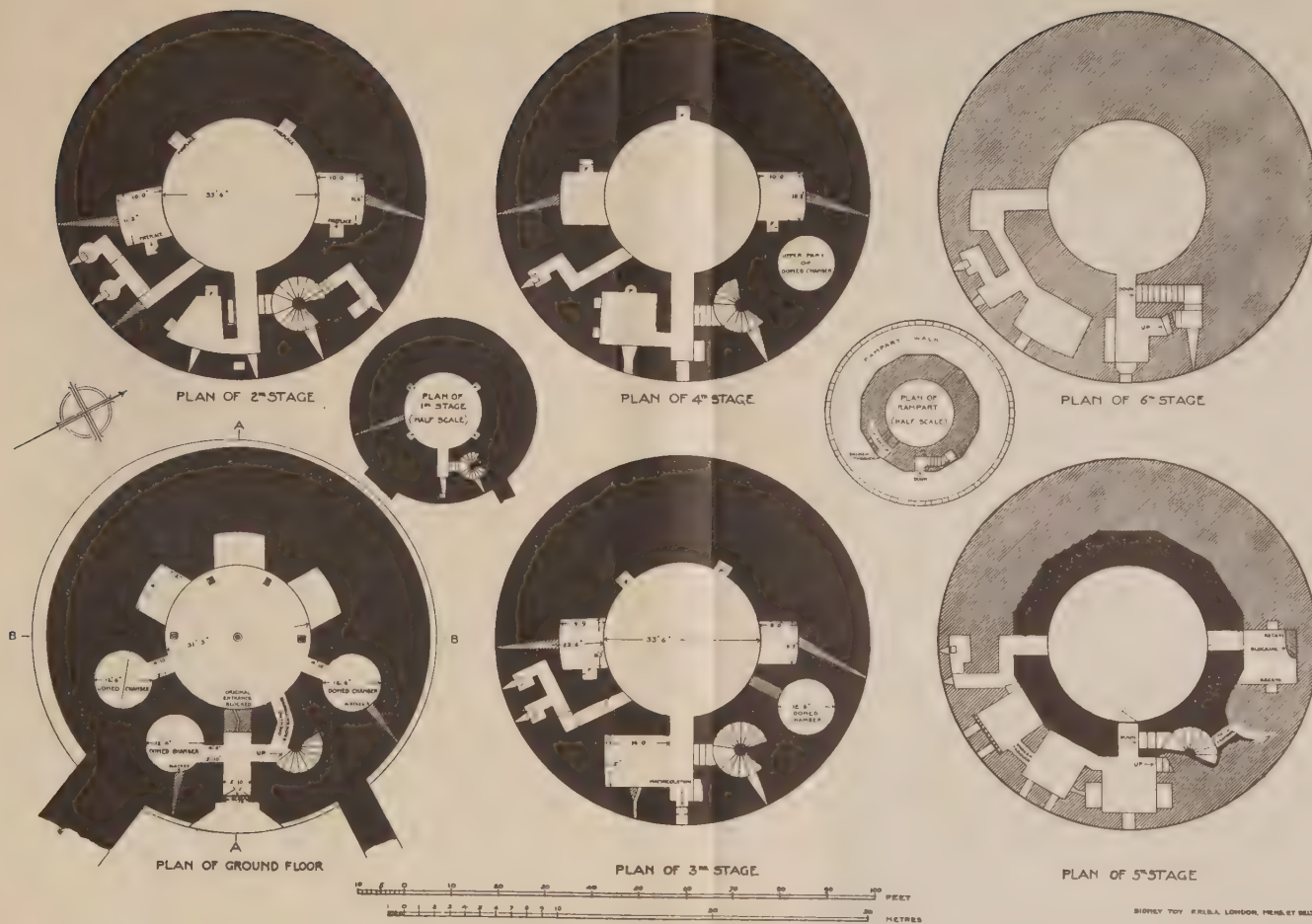


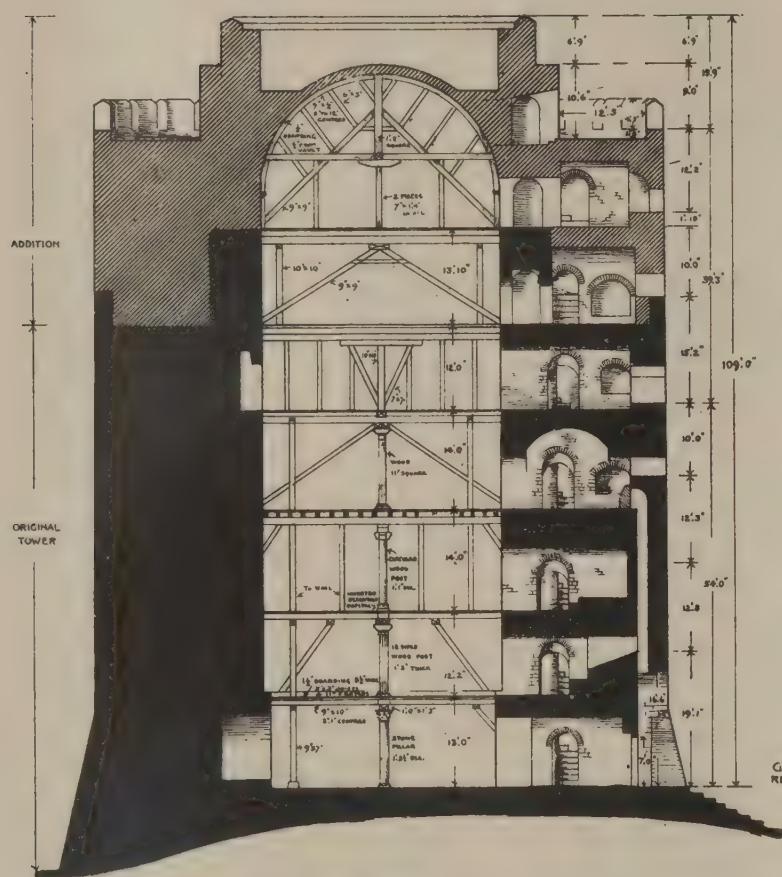
Fig. 2. Roumeli Hissar. The east tower and the barbican



Fig. 1. Roumeli Hissar. The east tower from within the Castle

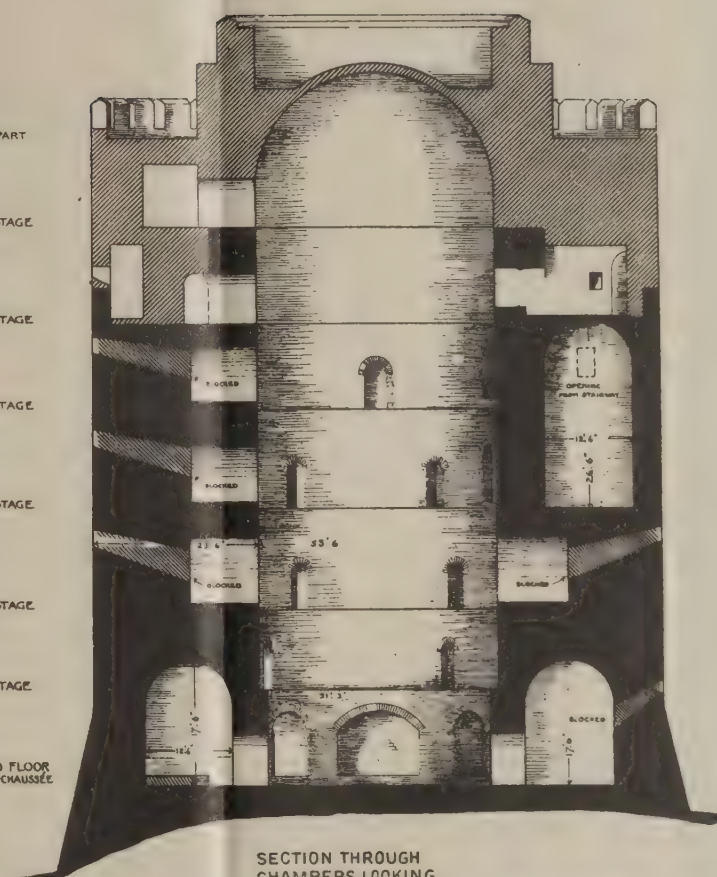
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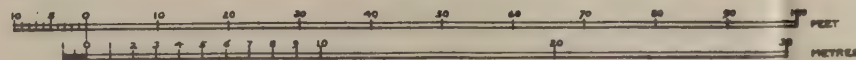
SECTION A.A.

RAMPART
6TH STAGE
5TH STAGE
4TH STAGE
3RD STAGE
2ND STAGE
1ST STAGE
GROUND FLOOR
REZ-DE-CHAUSSEE



SECTION THROUGH
CHAMBERS LOOKING
NORTH

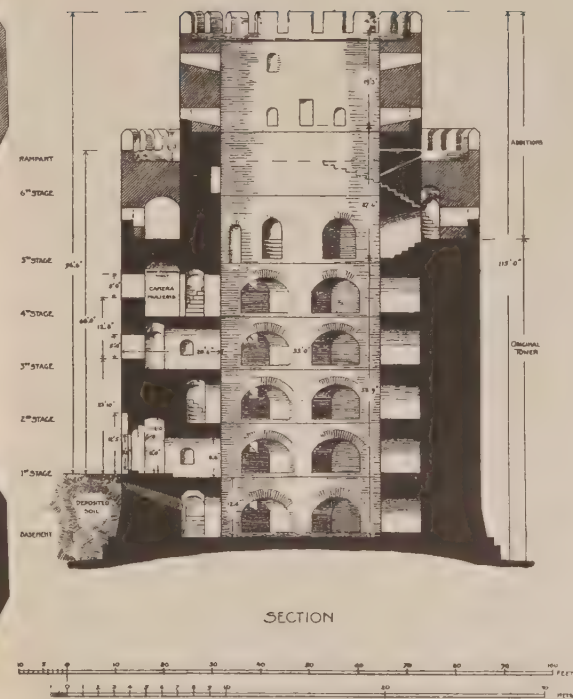
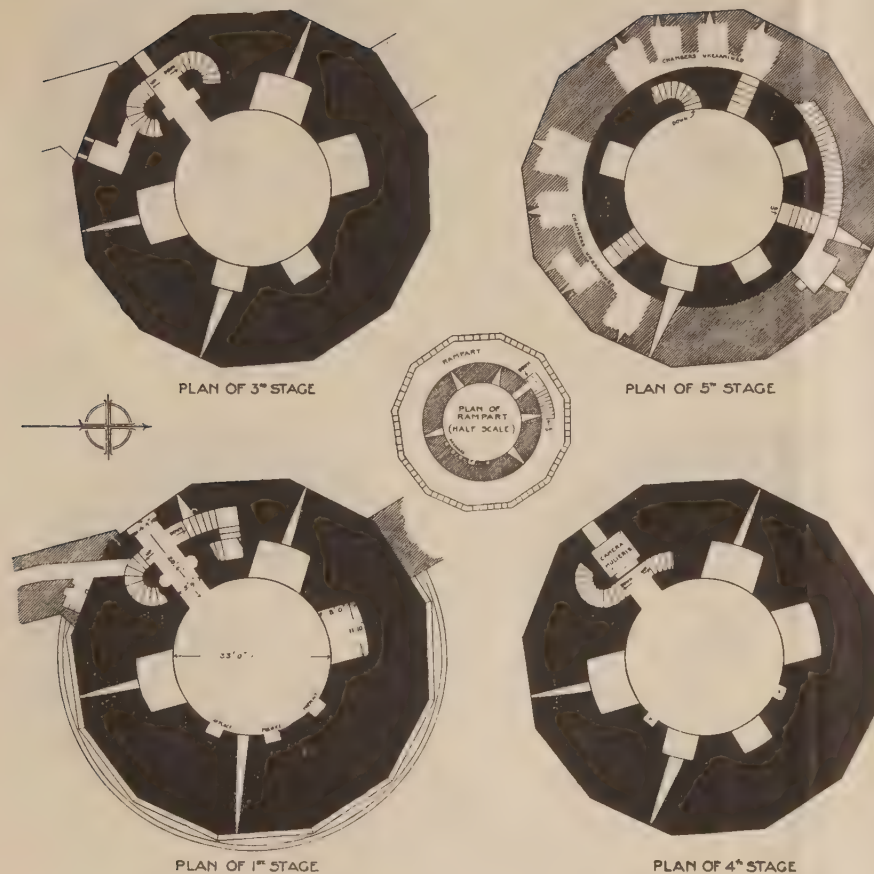
FLOORS REMOVED



SHIRNEY TOY, P.R.I.S.A. LONDON, MARKET DELT. MAY 1928.

ROUMELI HISSAR. The North Tower.

Published by the Society of Antiquaries of London, 1930.

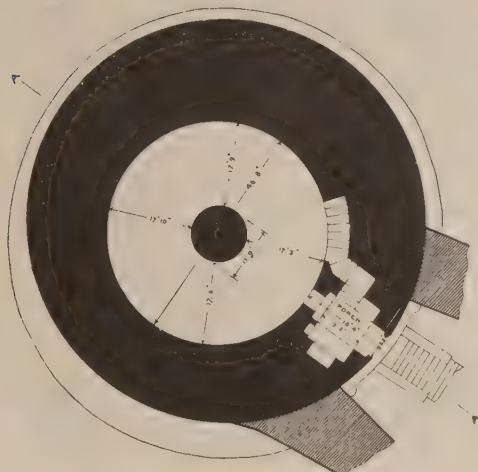
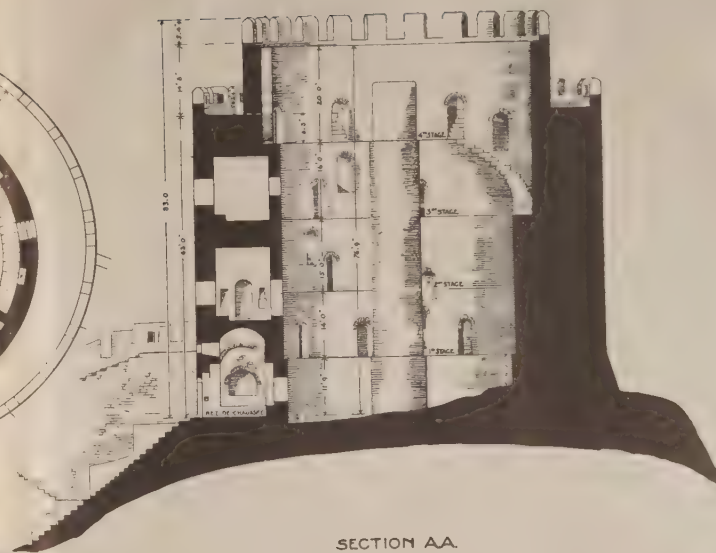
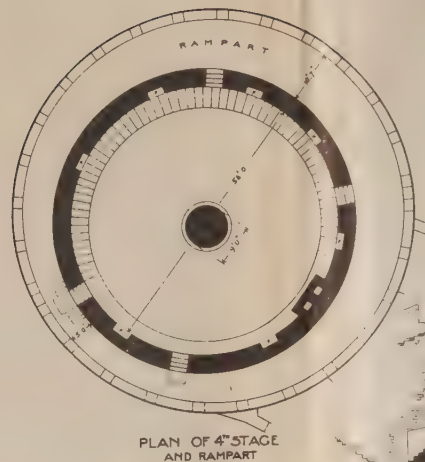
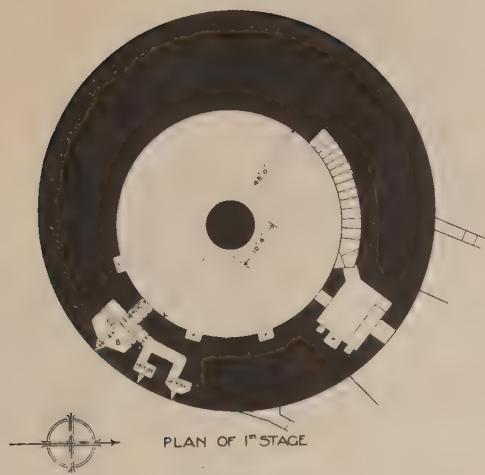


SIDNEY TOY F.R.S.E. LONDON. MEAS. BY DELT. MAY 1928.

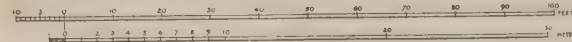
ROUMELI HISSAR. The East Tower.

Published by the Society of Antiquaries of London, 1930.





CHAMBER AT B. 1st STAGE



SIDNEY TOY FR. & A. LONDON. PENS. ET DELT. MAY 1928

ROUMELI HISSAR.
THE SOUTH TOWER

Published by the Society of Antiquaries of London, 1930



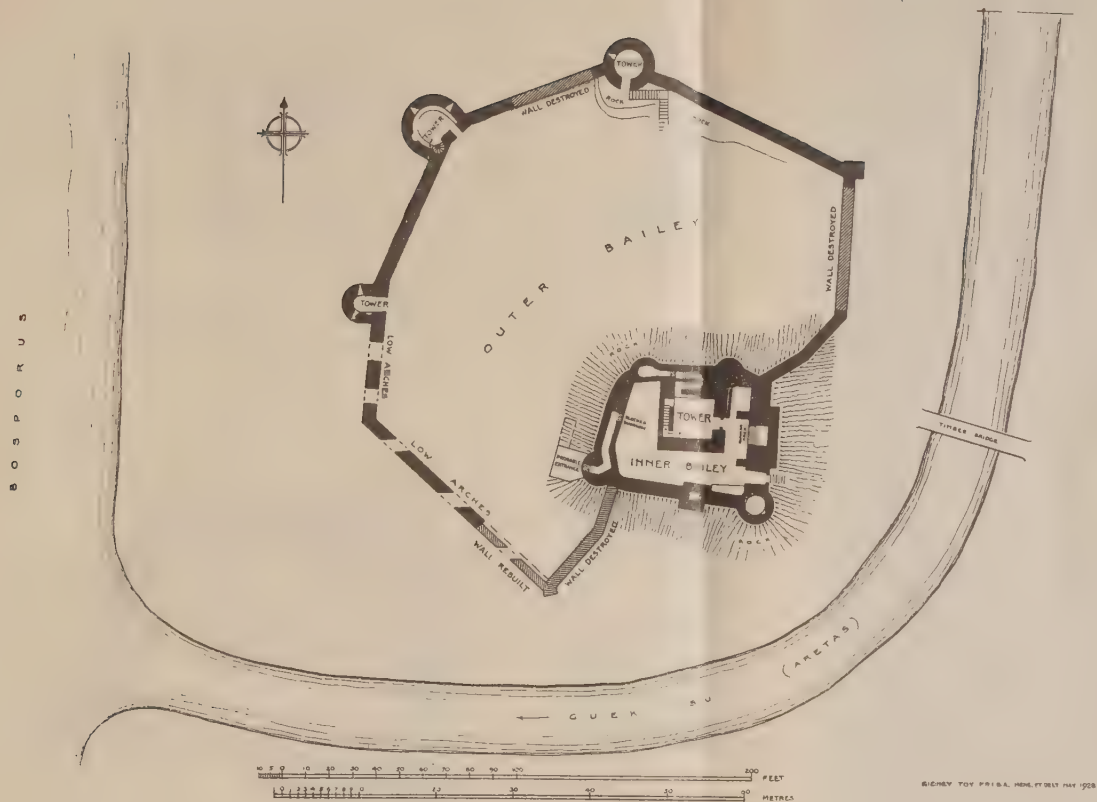
Castle of Roumeli Hissar. The south tower and adjoining walls from within the Castle



Fig. 1. Roumeli Hissar. From the hill west of the Castle. Looking across the Bosphorus to Anatoli Hissar on the east shore

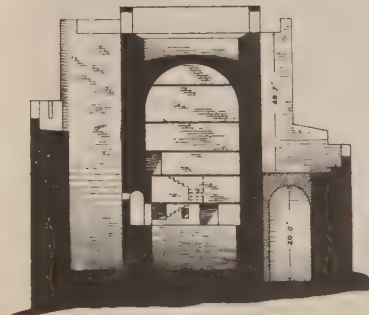
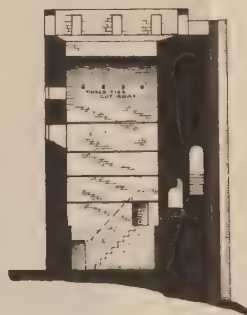
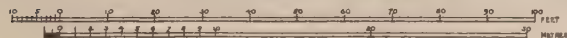
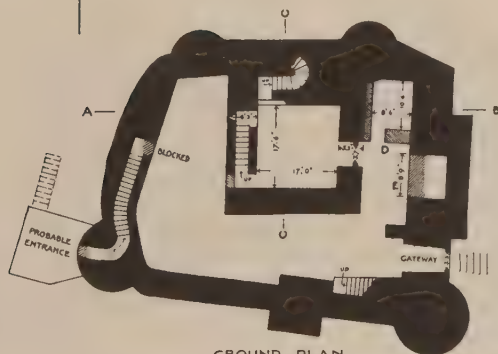
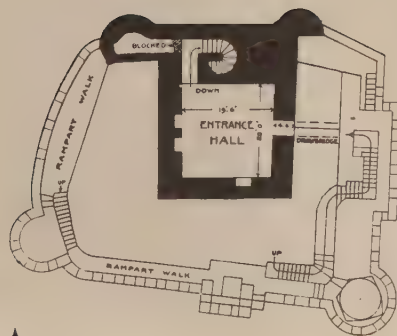


Fig. 2. Anatoli Hissar. From the Bosphorus



ANADOLI HISSAR. PLAN OF CASTLE.

Published by the Society of Antiquaries of London, 1930.



SIDNEY TOY, F.R.I.B.A. DESIGNED, MAY, 1928

ANADOLI HISSAR. The Keep.

Published by the Society of Antiquaries of London, 1930.



Fig. 1. Anadolı Hissar. From the east



Fig. 2. Hieron Castle. Anadolı Kavak. The Gateway from the east



Fig. 1. Hieron Castle. From the mound in the lower bailey



Fig. 2. Hieron Castle. The gateway and flanking towers from within the Castle. The device of the Paleologi is seen above the blocked gateway

denied him in the Black Tower; and, dubious as these privileges would appear in any other condition, here they were cherished. In the prison there was a consecrated altar which the Christians were permitted to use on great festivals. Among the captives was a chaplain who was linked together with Wratislaw by an iron chain. For the purpose of saying Mass, and for that purpose alone, the chaplain was released from his chains, though he was joined to his companion again immediately after the service. Wratislaw, with the chain still attached to him, acted as acolyte, sang the epistle, and gave the other prisoners the crucifix to kiss. After describing all this Wratislaw continues:

‘Once on a festival after Holy Mass, a master carpenter, a Christian prisoner, invited the chaplain and me to partake of a fine tabby tom-cat, which he had fed up for a long time, and named Marko. It was a fine and well fatted cat, and I saw with my own eyes when the carpenter cut his throat. As my partner Mr. Chaplain would not go, and fastened together as we were I could not go without him, he sent us, as a present, a fore shoulder of the cat, which I ate. It was nice meat and I enjoyed it very much, for hunger is a capital cook, so that nothing makes one disgusted; and if I only had plenty of such tom cats, they would have done me no harm.’

Anadoli Hissar, on the Asiatic coast opposite, is a comparatively small castle, being about one-quarter the size of Roumeli Hissar (pls. LXX, fig. 2, LXXI, LXXII, LXXIII, fig. 1). It consists of a large keep and an outer ward or bailey. Direct historical reference to the castle is scanty. Ducas related that the embassy sent by Constantine XII to the Ottoman Conqueror to protest against the building of a castle at Roumeli Hissar reminded the Sultan that his grandfather, Muhammed I, had asked permission from the Emperor Manuel to build a fortification on the Asiatic shore opposite.¹ From this statement the whole castle has been attributed to Muhammed I. Indeed even this has been distorted and the work attributed to the Conqueror's great-grandfather Bayazid I. The keep shows a distinct Western influence. It was remodelled, probably, by Andronicus Paleologus, under Latin inspiration, during the early years of the fourteenth century, and incorporates work of a much earlier period. The fortress as finished by the Ottoman Prince, therefore, consisted of the curtain-wall and wall towers of the bailey, which he built himself, and the great donjon or keep to which he had made minor alterations suitable to the castle as a whole.

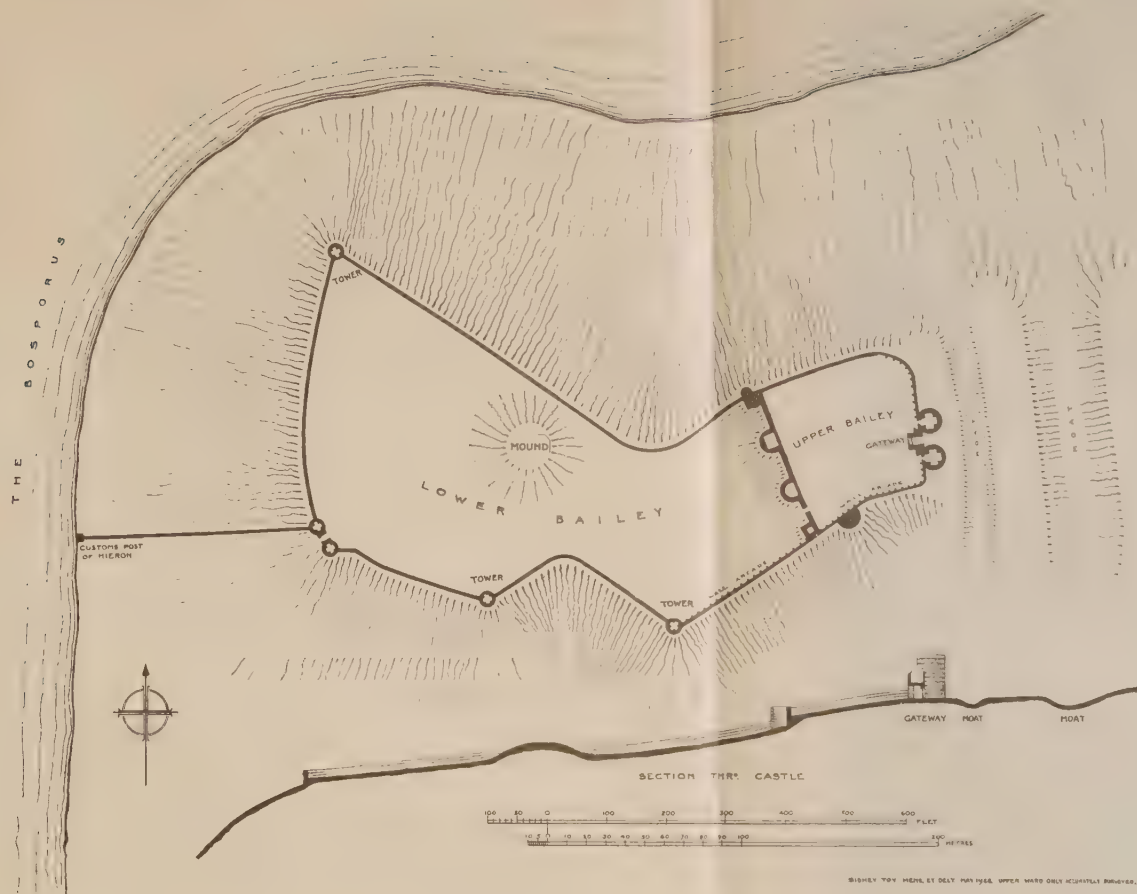
The bailey is enclosed by a curtain wall with towers at strategic points. Originally its west wall must have skirted the Bosphorus, for there are four low arches here which would admit of access to the sea by boat. The curtain wall and the wall towers are built of rubble similar to those of Roumeli Hissar, but

¹ Ducas, *loc. cit.*

the general design of these towers differs considerably from those of the castle opposite. Here they are all constructed in stages and rise much above the rampart walk of the curtain; that at the north-west had a newel stairway and a fireplace, and was evidently intended for occupation. The keep stands on the top of an outcrop of rock about 20 ft. high, and is built of rubble with some irregular brick lacing courses on the outside and timber bonding within. It is roughly square in plan with circular turrets at the south corners and on the north face. A square tower, built against the north wall, rises from within the keep to a height of 30 ft. above its exterior walls, leaving a small internal courtyard. This tower is roofed at a height of 43 ft. above its floor level with a heavy barrel vault of brickwork keyed with stones.

The keep has undergone such extensive alteration and repair, particularly during the last few years, that it is now very difficult to trace the original means of approach to the inner courtyard and from here to the top of the tower. The present gateway on the south-east of the courtyard must be relatively modern. There are traces of a blocked doorway on the inside face of the west wall, which suggest an entry from this side by means of a passage through the wall from the south-west turret; similar to that at Houdan in Normandy. A block of masonry, still existing against the turret, suggests steps to the entrance. There are no traces of an opening from the outside, but the wall here has been so extensively refaced that this may be expected. The approach from the inner courtyard to the tower, and from the entrance hall of the tower, which was on the second stage, to its ground floor may be traced with fair accuracy. The present lower doorway was probably opened out by the Turks, but originally the inner tower was entered by outside flights of steps following roughly the lines of the modern stairways. An arch supporting the upper flight over a deep recess in the east wall still exists, though the recess itself is blocked. A drawbridge spanned the space between the rampart walk and the doorway in the tower. From here descent to the first and ground floors was made by mural stairways, still existing, though partially blocked. The ascent from the entrance hall to the top of the tower was probably by means of a mural stairway in the north wall through the blocked doorway still seen at the level of the entrance hall opposite the descending flight. An additional vaulted chamber, 20 ft. in height, was formed by the Turks at the north-east corner of the courtyard.

Both castles at Kavak were built on the crests of hills, and are therefore far removed from the water's edge, but, as already stated, walls were carried down from each of them to the Bosphorus. Only one now remains above ground, the castle of Hieron on the Asiatic shore (pls. LXXIII, fig. 2, LXXIV, LXXV, LXXVI). In construction the walls and towers of this castle bear remarkable resemblance to that part of the land walls of Constantinople built by Manuel

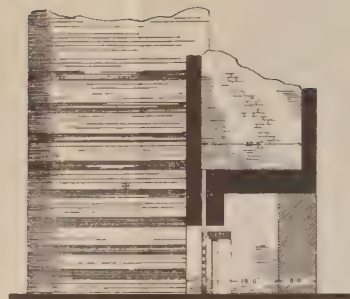


HIERON CASTLE. ANADOLı KAVAK. Plan and section through the Castle.

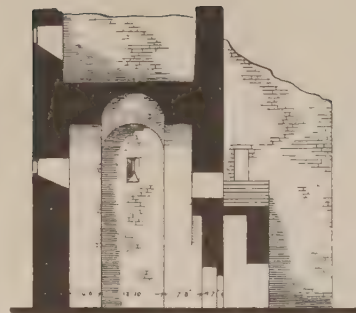
Published by the Society of Antiquaries of London, 1930.



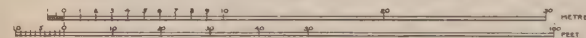
EAST ELEVATION OF GATEWAY



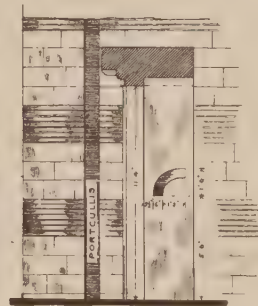
SECTION THRO' GATEWAY



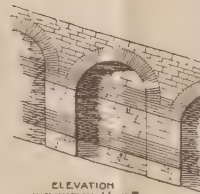
SECTION THRO' NORTH TOWER OF GATEWAY



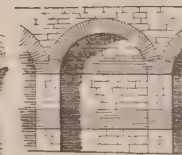
PLAN OF GATEWAY



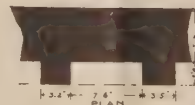
SECTION THRO' GATEWAY



ELEVATION
INCLINATION $1\frac{1}{2}$ IN 5.



ELEVATION



PLAN



PLAN

ARCADÉ AT E. WALL OF CURTAIN.

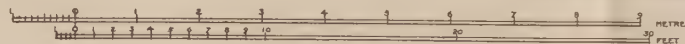


SLAB ON TOWERS OF OUTER GATEWAY



CROSS ON SIDES
OF TOWERS

SLAB OVER INNER GATEWAY



SIDNEY TOY F.R.I.S.A. LONDON. MEAS. ET LIT. MAY 1928.

HIERON CASTLE. ANADOLI KAVAK.

Published by the Society of Antiquaries of London, 1930.

Comnenus about A. D. 1150. Manuel founded a monastery in the neighbourhood of Roumeli Kavak, dedicated in honour of Michael the Archangel, and the adjacent castle became known by the name of the castle of the Incorporeal Saints. There can be little doubt that both castles belong to the period of Manuel Comnenus. They were held in 1350 by the Genoese, who had long been established at Galata. In 1452 they were taken by the Ottoman conqueror, who destroyed the European castle to provide material for his works at Roumeli Hissar, but retained the castle on the Asiatic shore. The former is now in a most ruinous condition.

Hieron Castle consists of an upper bailey on the crest of the hill and an extensive lower bailey running westward down its slopes (pl. LXXV). The upper ward is defended on the east, where the ground is relatively level, by two moats, one near the great entrance gateway, and another seventy yards in advance of it, the latter being very wide and deep. Beyond the wall on the east side of the bailey the ground falls precipitously to the inclined platform of the lower bailey, which stretches towards the sea, and is enclosed by a curtain wall running round the edge of the platform. The curtain wall of the lower bailey is strengthened at rare intervals, but at the important angles, by circular towers 26 ft. in diameter externally. Internally the towers are of cruciform plan, the tall lower stage having a central cupola supported by four barrel vaults. The castle is built of large coursed masonry, of volcanic rock, limestone, and rubble, laced with brickwork at intervals of 4 ft. The lacing, being of seven courses, itself attains a thickness of 2 ft. These courses all follow the contour of the ground, and at places have an inclination of $1\frac{1}{2}$ in 5. Ancient marble shafts are used as borders in the gatehouse. The east and south walls of the upper bailey and the adjacent piece on the south side of the curtain of the lower bailey form internally a series of blind arcades. This is a method of construction often employed by the Romans. It not only effected a considerable economy of material in the construction of a thick wall, but greatly facilitated the repair of breaches in the wall. On the north side of the upper bailey the fall to the sea beyond the wall is precipitous, and there are no arcades. The wall between the two baileys is defended by four bastions, and there is a similar bastion near the west end of the south wall. Two of these are quite solid throughout, and none of them appears to have been much higher than the rampart walk of the adjacent walls (pls. LXXIV, fig. 1, LXXVI).

The gateway is flanked by large drum towers now about 50 ft. in height and vaulted, like the towers of the lower ward, by a central cupola and deep supporting arches. The entrance was protected by a portcullis, but the inside arch being blocked with masonry to the depth of 8 ft., there is no indication of the character of the original doorway. A doorway constructed out of the

marble fragments of an entablature from some temple was inserted immediately inside the portcullis at a period now difficult to determine (pls. LXXIII, fig. 2, LXXVI). In the centre of the face of each of the flanking towers of the gateway, about 23 ft. from the ground, there is a stone slab (pl. LXXVI) on which are sculptured a cross and crescent and the abbreviated legend:

ΦΩΣ ΧΡΙΣΤΟΥ ΦΕΝΕΙ ΠΑCΙ

The light of Christ giveth light to all men

The chamber over the gateway is of different masonry from the rest of the work, and was probably rebuilt in the fourteenth century. Over the blocked entrance facing towards the bailey is the device of the Paleologi, a cross between four capital B's representing the legend:

Βασιλεὺς Βασιλέων Βασιλεύων Βασιλεύουσι.

King of Kings Lord among Lords.

Before concluding I desire to express the deep debt of gratitude I owe to our Fellow Mr. Harold Sands, whose extensive knowledge and interest in the subject and munificent support have rendered the investigations possible. My thanks are also due to Mr. and Mrs. Middleton Edwards of Constantinople, for invaluable assistance in my negotiations on the spot (the examination of some parts of Roumeli Hissar in private occupation and of the keep at Anadolu Hissar was only possible through the indefatigable efforts of Mrs. Edwards), to Halil Bey, Director of the Museum of Antiquities, Constantinople, and Sir Telford Waugh, late H.M. Consul-General at Constantinople, for the translation of the Arabic inscription at Roumeli Hissar, and to our Fellow Mr. O. M. Dalton for assistance with the earlier inscription at Anadolu Kavak.

IX.—*Further Excavations at Caerwent, Monmouthshire, 1923-5.*

By V. E. NASH-WILLIAMS, *M.A., F.S.A.*

Read 17th December 1925

I. THE BATHS OPPOSITE THE FORUM

IN 1923, in consequence of a change in the ownership of the land, a large part of the area within the Roman walls at Caerwent came into the market, including certain sites not explored during the excavations of 1899-1913.¹ Among the latter was the orchard adjoining the main road immediately to the north of St. Stephen's Church. This orchard was acquired for building purposes, and, in order to recover something of the history of the site before the work of destruction began, the National Museum of Wales secured the permission of the new owner, Mr. Moses Adams, to cut trenches across it. The excavations were carried out by the writer in consultation with Dr. R. E. M. Wheeler, F.S.A. A generous grant towards the cost was made by the Haverfield Bequest Committee, and thanks are also due to the owner of the site, to the vicar of Caerwent (the Rev. W. Coleman Williams), and to the churchwardens for courteous assistance during the work.

The area trenched lies in the central insula in the southern half of the Roman town. The north-western corner of this insula was explored in 1903 and 1910. The present work brought to light parts of three buildings, two of domestic type and the third a bath-building of considerable size. In accordance with the system of enumeration employed in previous reports, these buildings will be referred to successively as XXIV s, XXVII s, XXVIII s.

XXIV s (pl. LXXVII)

The north-western corner of this building was uncovered in 1903, when its north wall was found to contain a doorway with two stone steps leading up into the main thoroughfare.

The building as a whole was of simple rectangular plan, and bore traces of two successive alterations. The external walls remained throughout substantially the same, except on the north side, where, as the occurrence of two contiguous walls showed, the frontage of the whole building had at some time

¹ See *Archaeologia*, xxxvi, pp. 418-37; lvii, pp. 295-316; lviii, pp. 119-52, 391-406; lix, pp. 87-124, 289-310; lx, pp. 111-30, 451-64; lxi, pp. 565-82; lxii, pp. 1-20, 405-48; lxiv, pp. 437-52.

been advanced, the original road-wall being replaced by one 2 ft. to the front. The second alteration consisted in the insertion of a partition longitudinally down the centre of the building. Of the interior nothing can be said beyond that the walls were covered with painted wall-plaster, predominantly yellow in colour. No evidence was forthcoming to date the construction of the building or the later alterations. Its general alignment, however, would seem to mark it as contemporary with the adjacent building (XXVII s), which, as will be shown, was constructed in the late first century A. D.

Immediately to the north of the later road-wall were found two fragmentary human skeletons, both badly crushed (? by traffic along the road). They lay level with the top of the dismantled wall, and had been buried with feet extended towards the east. With them occurred two bronze rings still on the finger-bone and a glass bead, the latter, however, not necessarily in association. The evidence is too vague to date the burials, but the place of interment would seem to indicate a date after the Roman period (see below, p. 235).

To the west of the burials, and partly overlying both them and the road-wall of the building, was a wall of late (? medieval) date, while to the north, but on an oblique alignment, occurred another wall, clearly of early construction and perhaps antedating the main building, but again too fragmentary to make out; also, beneath it, traces of a slab-built drain (?), much ruined, in which was found a single fragment of Samian form 37 (Trajanic).

XXVII s (pl. LXXVII)

This building, also of rectangular plan, comprised two halves—an eastern and a western—separated by a central partition-wall. Structurally the partition belonged to the eastern half, which therefore must have been built first, though the two halves were approximately contemporary. In the original plan they comprised single long narrow rooms of about equal area.

Later, each half was extended by the addition of a small room to its southern end. These rooms lay at a somewhat lower level than the main building, with which each communicated by a doorway and a stone step. The additional room (2) in the west wing was floored with *opus signinum*, and its walls were covered with wall-plaster decorated with red lines on a white ground. At or about the same time partition-walls of masonry similar in character to that of the added rooms were inserted into the eastern half of the building forming a long J-shaped room (4 and 5), in the north-eastern corner of which were found remains of a large amphora bearing the stamp of the potter C. Antonius Quietus (p. 247, below) with fragments of Samian forms 37, 18/31, 33, 36 (Domitian-Hadrian).¹ The layer containing this pottery, however, was

¹ For the dating of the separate fragments see the detailed list below, p. 240.

definitely of the period of the occupation of the original building and earlier than the new partition-walls. On this evidence, therefore, it would appear that the building as originally planned was constructed in the late first century A.D. and the new rooms and partition-walls added not earlier than the time of Hadrian.

Later still, a further alteration and extension was carried out, this time of the eastern half only. The external walls of the previously-added room were demolished, and a considerably extended room (or open yard) (6) built in its place. The floor of the new room was paved with flag-stones which were carried over the footings of the demolished cross-wall. Beneath this pavement were found, besides animal bones, a 'second brass' of Hadrian, of 119 A.D., in good condition, fragments of Samian forms 29, 37, 18, 18/31, 33, Ritt. 129 (Domitian-Hadrian), and much buff, grey, and black ware (fig. 4, c 22-36), mostly of second-century date. The construction of the paved room is, therefore, unlikely to be later than the second century.

The final phase in the occupation of the building was marked by the demolition of one of the walls of the J-shaped room and its replacement by an extended partition shutting off the passage between the front and rear of the building as a separate room (7). The floor of this room was covered with a thick layer of charcoal, beneath which occurred an ornamental bronze button, a burnt denarius of Caracalla of date 202 in mint condition, sherds of Samian forms 37, 18, and 18/31 (Flavian-Antonine), and fragments of coarse-ware vessels (fig. 4, c 16-21) of second-century types. The adjacent room (5), forming the base of the J, was in this phase floored with *opus signinum*. In the filling beneath this were found a bronze harness-stud, sherds of Samian forms 37, 27, 33 (Domitian-Antonine), and coarse-ware fragments (fig. 4, c 2-15) of the second to the fourth centuries. The occurrence of a third- or fourth-century olla (c 10) in the make-up of the *opus signinum* floor dates this floor, and with it the corresponding charcoal layer in the adjoining room (7), in the latter part of the Roman period. No evidence of later occupation was found.

XXVIII s (pl. LXXVII)

The remainder of the insula, so far as excavated, contained a complex of foundations of a scale and character that at once suggested the presence of a public building. The occurrence of such a building on a site that fronted the forum and basilica was not unexpected. Owing to the limits set by the modern boundaries, only a part of the building could be excavated; sufficient, however, was revealed to show that during the main period of its history it was a bathing establishment. That this history was a long one was indicated by exten-

sive traces of alteration and rebuilding. In all, five structural periods were distinguishable, though it was not possible in every case to determine their chronological limits:

Period I. Of the walls of the earliest building only the barest fragments remained. A wall running north and south and flanked on the east by a cement-lined conduit had divided it into two halves, in the western (1) of which were found remains of a peristyle in the shape of five sandstone blocks, each $2\frac{1}{2}$ ft. square, set at regular intervals of 7 ft. and at a distance of 11 ft. from the north wall. The occurrence of a quadrant-shaped tile at the base of one of the blocks perhaps indicates the material of the columns. North and west of the peristyle were outer walls which apparently enclosed a corridor (3, 3) giving access to the buildings on the south. Probably it had been roofed with a pent-roof from which, on the west, the rain-water was caught by a gutter cut in solid blocks of sandstone. This emptied into a slab-covered drain to the south, in which was found a 'third brass' of Gratian (367-73), suggesting that the drain had remained continuously in use at least until late in the fourth century.

As to the purpose of the building in this period little can be said. The peristyled courtyard, however, anticipated the larger porticoes of the second period, and presumably, like its successor, formed the forecourt of a bath-building erected during the early years of occupation. A worn 'second brass' of Vespasian (69-79) found in the conduit may, perhaps, in the absence of other evidence, be taken to indicate that the bath-building, like the other buildings on this site, was in use towards the end of the first century.

Period II. In this period the original structure was almost entirely rebuilt. The earlier ambulatory (3), at any rate on its north side, was demolished, probably to permit of the widening of the main street. The new north wall was built on a frontage some 4 ft. to the rear of the old, and the space thus gained utilized for the addition to it of nine well-built plinths of squared masonry. These measured roughly 4 ft. by 4 ft., and were almost certainly designed to carry a series of massive engaged columns. The interval between plinths was 10 ft. Against the footings of the plinth immediately to the west of the entrance(?) to the peristyle was found a sherd of Samian form 37 (Domitian-Trajan).

The building itself was now divided into two parts by a cross-wall traversing its width from east to west. The front part was occupied by a new peristyle, or perhaps rather by an aisled hall. In its original form this comprised two parallel rows of columns, 22 ft. apart and at approximately equal distances of 11 ft. from the north and cross-walls respectively. The seven columns of each colonnade stood at intervals of 10 ft., and were supported on heavy pedestals, each consisting of a large sandstone block, 3 ft. 2 in. by 2 ft. 9 in. by

2 ft. 4 in., resting on a flat plinth of the same material, 4 ft. 6 in. by 2 ft. 9 in. by 1 ft. 3 in., the whole bedded in concrete. Five of these pedestals were found *in situ*, while in other cases the bedding alone remained. Altogether, therefore, the remodelled structure comprised a basilical hall or (less probably) an open peristyled court, 77 ft. long by 22 ft. wide. The eastern end was floored with *opus signinum* and the interior rendered in white wall-plaster. Lying on the hard floor near the north-eastern pedestal was found a 'third brass' each of Tetricus II (268-73), Constantius II (337-61), and Arcadius (394-408).

Into the western half of the northern aisle or ambulatory were let three small rooms or cubicles (4, 5, 6) floored with *opus signinum*. A doorway in the south-western corner of the structure connected the two halves of the building.

The southern half now, if not previously, contained a suite of baths. Owing to the presence of a modern cow-shed only a part of them could be recovered. As originally completed they must have comprised a long rectangular building of substantial construction with an apsidal projection (7) at one end and a large circular cistern (9) at the other. The apse (7) contained the cold plunge-bath. It was separated from the rest of the building by a wall or parapet built of roofing-tiles and furnished within with a ledge, and, in one angle, a step. The floor was of flagstones bedded in *opus signinum*, 2 ft. thick, and was edged with a 4-inch quarter-round moulding. The walls were heavily rendered in cement, which had been twice renewed, and still stood, when excavated, to a maximum height of 6 ft. A large number of voussoirs of calcareous tufa, found in the accumulated debris filling the bath, suggested that the apse had originally been roofed with a half-dome. The room (8) to the east also had a concrete floor and cemented walls; from its position it must have been the cold room or *frigidarium*. The circular compartment (9) adjoining was lined with coarse masonry, and sunk to a depth of 7 ft. below the floor-level of the other rooms. It had presumably served as a water-storage tank or reservoir to supply the baths. Its wall still stood to a height of 11½ ft. above its floor.

Period III. In this period a new room (10 and 11) was added to the baths on the north side, part of the south wall of the hall or peristyle being demolished for the purpose. Two doorways, one on the north and the other on the west, connected the new room respectively with the hall and the open yard (15) to the west. The date of this reconstruction was not ascertained, but the limits of the earlier and later periods are general grounds for referring it to the third century.

Period IV. This was marked by the addition of a new wing to the original baths. The north wall of the room added in the third period was demolished, to be replaced by a new wall some 4 ft. to the south. This was done probably to permit of the building of one of the new rooms (12) actually in the hall or

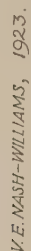
peristyle itself, without, however, blocking it up. The enclosure thus formed between the wall and the baths was partitioned off into four separate rooms, of which the two middle (10, 13), together with the small room (12) that projected into the peristyle, were built over pillared hypocausts. Of the remaining rooms, that (14) next to the side street which formed the eastern boundary of the insula contained the furnace, placed here doubtless for convenience in the transport of fuel. The cheeks of the furnace were of masonry built up to a height of 2 ft. above floor-level. The floor was found covered with a thick layer of wood-charcoal in which occurred a 'third brass' each of Tetricus I (268-73), Valens (364-78), and Arcadius (394-408). The new bath-rooms, therefore, were in use in the fourth century. A large flue led through the wall of the furnace into the basement of the next room (13). The floor of this room had been destroyed, but there were indications that it had been of stone flags covered with concrete, the whole supported on brick *pilae*. The proximity of this room to the furnace is sufficient to distinguish it as the *caldarium*.

The room (12) projecting into the peristyle proved to be the hot-water bath. It was still in an excellent state of preservation (pl. LXXVIII, fig. 2). The doorway leading into it from the *caldarium* (13) was fitted with a high threshold, heavily concreted and with edges rounded off; a step or seat led down into the bath. The floor was intact, and consisted of a double thickness of flagstones and concrete, all carefully laid over a pillared hypocaust; a quarter-round moulding filled the angle between wall and floors. Provision had been made for circulating the hot air within all the walls except that containing the doorway. At each end of the room the floor ended abruptly some 2 inches from the wall proper, and at this interval a false wall of cement 3 inches thick had been constructed from floor to ceiling; the wall opposite the doorway was lined in the more usual manner with a jacket of flue-tiles interrupted by a central lead-lined outlet whereby the bath was drained.

Next to the *caldarium*, and communicating with it by means of a doorway, was the *tepidarium* (10), similar in construction to the *caldarium*, though here again the floor had been destroyed. A second doorway and two broad steps led down from it into the original *frigidarium* (8), thus completing the normal sequence of bath-rooms.

Of the room (11) next to the *tepidarium* little can be said. It had no means of direct communication with the latter, and was not heated. The walls were cemented, and beneath the pavement of the floor ran a drain that emptied into a shallow channel sunk in the concrete floor of the *frigidarium*. Probably this room was an extension of the *frigidarium*.

It is possible that the alterations of this period included the demolition of the forecourt with its peristyle. The fragmentary foundations of this structure



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CAERWENT: ROMAN BUILDINGS NORTH OF THE CHURCHYARD.

WALLS OF THE SAME "PERIOD" MAY NOT BE STRICTLY CONTEMPORARY.



contrasted forcibly with the good preservation of the baths; and the intrusion of room 12 into the peristyle is also consistent with the disuse of the latter.

Period V. Whether or not during the last century of the Roman occupation the hall or peristyle north of the baths was, as suggested, already in a state of

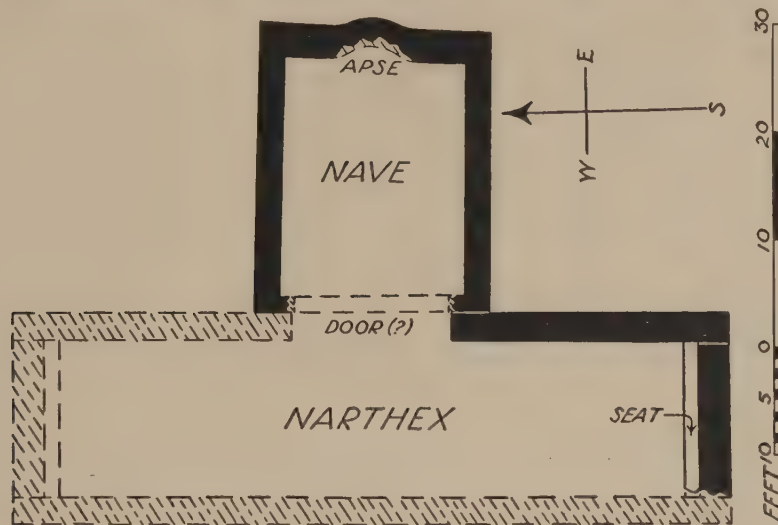


Fig. 1. Apsidal building. Conjectural restoration.

ruin, it is at least clear that the colonnades had long since been removed and the site thickly encumbered with earth and debris when a small building was inserted in the north-western angle. As the illustration (pl. LXXVIII, fig. 3) shows, the foundations of this new building not only overlay the ruined remains of the colonnade, but were bedded *at a height of a foot or more above them*, thus showing that they were already buried at the time. The new structure was of oblong plan, $21\frac{1}{2}$ ft. by 17 ft., with a flattened apse at the eastern end. The western end was largely missing, but an L-shaped fragment of a fore-building, not bonded in, but evidently contemporary with it, had survived at its south-western corner. Along the northern side of the south wall of this fore-building was a wide ledge, probably a bench.

Completed symmetrically (fig. 1), the plan of the building as a whole strongly suggests a small Christian church with a western narthex. Proof of this identification is not forthcoming; but, apart from the plan, one or two points may be cited in support of it. The orientation is a point in favour. The early burials of Christian type found to the west of the building (see above, p. 230) are consistent with the proximity of a Christian church; whilst the building is close enough to the early medieval church of Caerwent to suggest the possibility that the one may in a sense be the lineal successor of the other. A more

important consideration than any of these is the *probable date* of the building. Its construction was rough in the extreme, although its mortar had something of a Roman tenacity. Its plan is not un-Roman, save that the flattened apse is not a normal Roman feature. The whole character of the structure thus suggests a Roman tradition in a barbaric environment. This does not in itself imply a post-Roman date; there is a growing mass of evidence (at Wroxeter and elsewhere) that, as in Gaul, town-life in Britain in the fourth century A.D. was already on the down-grade. For example, the site of the basilica and forum in the midst of Roman Wroxeter is shown by careful examination to have been at that time a scene of ruin and desolation. A similar decay of civic pride at Caerwent may in the fourth century have sanctioned the neglect or destruction of the monumental peristyle of the central baths (see above, p. 234); and at the extreme end of the period it is likely enough that the Caerwent masons had already barbarized their craft to the extent of producing a building of the crude design and construction of that now in question. On the other hand, the depth of the accumulation of soil and debris between the foundations of the colonnade and those of the 'church' was such as to suggest that the latter may rather be of post-Roman origin. In this connexion we may recall the fairly substantial account of the settlement of the Irish saint Tathan at Caerwent in the early part of the sixth century, as evidence for the survival or revival of Christianity there in the Dark Ages. The question of date is of more than ordinary importance, since a building of this simple type, if erected in the Roman period, is not inconsistent with a purely secular purpose, whereas, if of post-Roman date, it could scarcely be other than ecclesiastical.

In summary, the following points may be emphasized in connexion with this interesting structure: (1) It was built over part of the later Roman colonnade *after* the remains of the latter had been buried to a considerable depth, and therefore without reference to them. (2) It was founded at a higher level than any definitely Roman building in the whole area excavated. (3) Its design and construction are close to the Roman tradition, but show barbaric elements. (4) The plan and orientation are consistent with those of a small sub-Roman church. On these grounds it is here postulated that the remains are those of a small Christian church of early post-Roman date.

Period VI. The foundations assigned to this period were almost certainly of various post-Roman dates. Some of them were found straggling inconsequently across the Roman main road—a circumstance that could not have been possible until after, and probably long after, Roman occupation, so-called, had ceased. In every case these late walls were of the crudest construction, depending on their bulk rather than on their mortar, which was little better than mud, to give them stability. One distinctive feature was the rounded external

corners of one or two of the buildings, suggesting the work of a people more accustomed to build in clay or mud than stone. Possibly some of these structures were as early as the 'Age of the Saints'; but doubtless many of them were of considerably more recent date.

The history of this part of the site may now conveniently be summarized:

SUMMARY

(a) The site was first occupied in the late first century by a large building—presumably a bath-building—furnished with a small peristyled courtyard with colonnades of brick.

(b) In the early second century the original structure was almost entirely rebuilt, the northern half of the building now being occupied by a hall or courtyard with massive stone colonnades replacing the earlier peristyle of brick, and the southern half by a suite of baths.

(c) At uncertain dates in the third and fourth centuries the suite of baths was twice altered and enlarged.

(d) By the end of the fourth century the basilical hall or peristyled courtyard occupying the northern half of the building had fallen into decay, but the baths in the southern half were still in use in the last decade of that century.

(e) At some date after, and probably long after, the final ruin of the hall or courtyard, part of its site was re-utilized for the construction of a small stone structure suggestive of a Christian church and perhaps assignable to the sub-Roman period.

(f) Finally, various fragmentary walls of post-Roman date found on the site were evidence of sporadic occupation in later, perhaps medieval, times.

FURTHER EXCAVATIONS AT

OBJECTS FOUND

I. COINS

I am indebted to Mr. Harold Mattingly, of the British Museum, and Mr. W. F. Grimes, of the National Museum of Wales, for help with the preparation of the following list:

Summary

<i>Emperor</i>	<i>Date</i>	<i>Æ.</i>	<i>1 Æ.</i>	<i>2 Æ.</i>	<i>3 Æ.</i>	<i>Total</i>
	A.D.					
Vespasian	69-79	—	—	2	—	2
Domitian	72-96	—	—	5	—	5
Trajan	98-117	—	1	2	—	3
Hadrian	117-38	—	—	2	—	2
Antoninus Pius (?)	138-61	—	—	1	—	1
Marcus Aurelius (as Caes.)	140-61	—	—	2	—	2
" (as Aug.)	161-80	—	1	—	—	1
Faustina I	d. 141	—	1	—	—	1
Commodus	175-92	—	—	1	—	1
Lucilla	d. 183	—	1	—	—	1
Caracalla	196-217	1	—	—	—	1
Gordianus III, Pius	238-44	—	—	1	—	1
Gallienus	254-68	3	—	—	2	5
Postumus	259-67	1	—	—	1	2
Victorinus	265-7	1	—	—	3	4
Tetricus I	268-73	—	—	—	14	14
" II	268-73	—	—	—	5	5
Claudius II, Gothicus	269-70	—	—	—	6	6
Tacitus	275-6	1	—	—	—	1
Probus	277-82	1	—	—	—	1
Carausius	287-93	1	—	—	5	6
Allectus	293-6	—	—	—	2	2
Maximianus II, Hercules	296-305	—	—	1	—	1
Helena	d. 328	—	—	—	2	2
Theodora	d. 328	—	—	—	1	1
Constantine I (as Aug.)	307-37	—	—	1	6	7
Urbs Roma	330-5	—	—	—	2	2
Constantinopolis	330-5	—	—	—	11	11
Fausta	d. 326	—	—	—	1	1
Crispus	317-26	—	—	—	2	2
Constantine II (as Caes.)	317-37	—	—	—	3	3
Constans	333-50	—	—	—	10	10
Constantius II (as Aug.)	337-61	—	—	—	3	3
Magnentius	350-3	—	—	—	1	1
Valentinian I	364-75	—	—	—	6	6
Valens	364-78	—	—	—	4	4
Gratian	367-73	—	—	—	5	5
Arcadius	394-408	—	—	—	4	4
<i>Imitations (radiate)</i>	c. 300-400	—	—	—	2	2
<i>Minims (radiate)</i>	c. 300-400	—	—	—	1	1
" (non-radiate)	c. 300-400	—	—	—	1	1
<i>Unidentifiable</i>	—	—	—	1	6	7
Total	69-408	9	4	19	109	141



Fig. 1. Caerwent, south wall; general view looking west from the South Gate (right)



Fig. 2. Building XXVIII s.; the hot-water bath (12) showing the heating flues (left)



Fig. 3. East end of the apsidal building covering the NW. corner of the colonnade of building XXVIII s. A, column base of the original colonnade (period I); B, bedding for column base of the reconstructed colonnade (period II); C, apse of apsidal building



Fig. 1. Outer wall-face: facing stones above and core below; showing method of construction



Fig. 2. Cutting through earthen ramp backing the wall, showing the inner wall-face and the wall-footings (behind pole)



Fig. 3. No. 3 Break

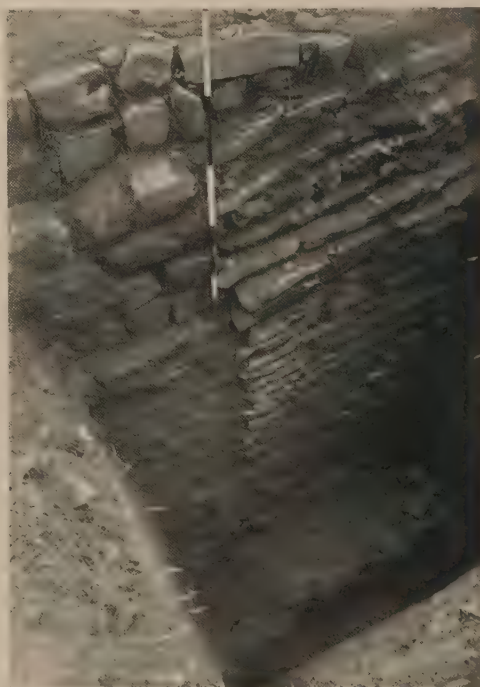


Fig. 4. No. 9 Break

2. STAMPED TILES (pl. LXXXIV, fig. 3)

Tile bearing the stamp **LEG·II·AVG** with the imprints of a hob-nailed shoe and a dog's foot. The stamp shows that the tile was made in the kilns of the Second Augustan legion at Caerleon (Isca), nine miles away. For the stamp-type see Wheeler, *The Roman Fort near Brecon*, fig. 52, 1, where it is listed as occurring in a building of early

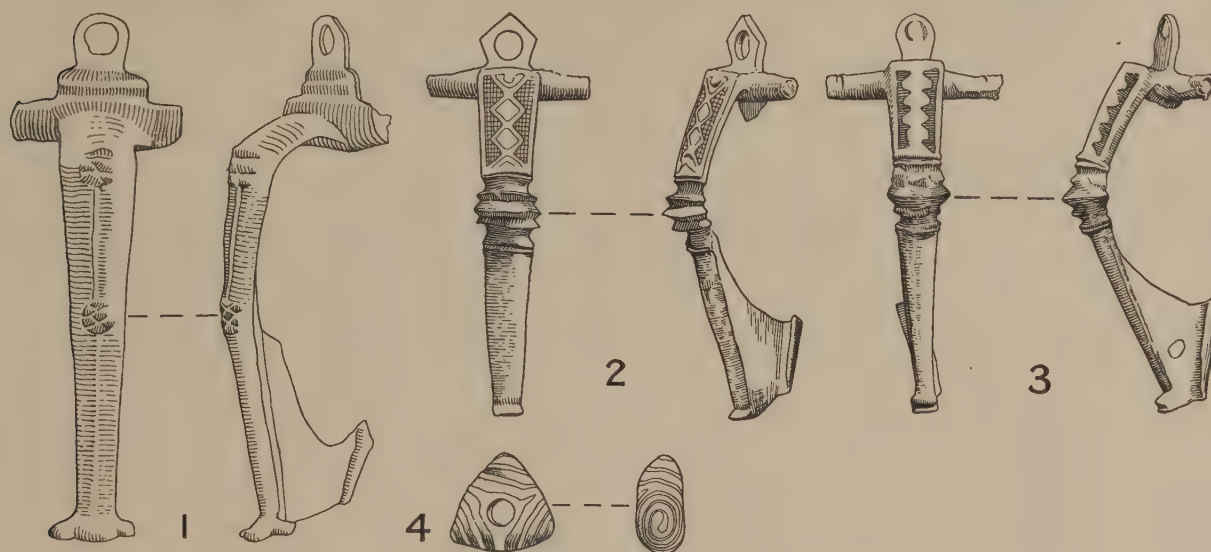


Fig. 2. Objects of metal and glass. (1)

second century A.D. date. The type has also been found at Caerleon in layers of the same period. Found with two fragmentary tiles similarly stamped in XXVIII s in the accumulated debris in the cold plunge-bath (Room 7). The debris cannot have been earlier than the late fourth century A.D. For the only other stamped legionary tile recorded from Caerwent see *Archaeologia*, lx, 124.

3. OBJECTS OF BRONZE, ETC. (fig. 2)

1. Bronze fibula. The head is flattened out to a broad rectangular cross-bar with the lower edge folded back to form a semi-cylindrical cover for the iron-hinged pin and the upper edge continued forward into a moulded bar and solid loop. The bow, hollow beneath, is decorated with a central v-shaped groove marked off above by a rectangular raised label with two transverse cut-marks on the summit of the bow, below by a circular projecting boss with intersecting diagonal cut-marks, which separates the head of the bow from the foot. The foot is flattened obliquely to form a faint central ridge, and ends in a strongly splayed moulded terminal. Of the same type as Curle, *Newstead*, pl. LXXXVI, 21 (Antonine). Probably late Antonine. From XXVIII s. Unstratified.

2. Bronze fibula with a bronze-plated iron-hinged pin. The cross-bar has double side-grooves, and continues forward into a solid pentagonal loop. The head of the bow, which is flat beneath and rises perpendicularly from the cross-bar to make an angle

immediately above, is decorated with a row of four raised lozenges of the metal, inlaid with white enamel and set in dark crimson enamel. Strongly marked collar mouldings separate the head of the bow from the foot, which is plain, ends in a single flattened raised moulding, and seems to have been overlaid originally with crimson enamel. For the general type, cf. Atkinson, *Lowbury Hill*, pl. x, 45. Probably Antonine. From XXVIII s. Unstratified.

3. Gilt bronze fibula, of same type as last. The cross-bar has single side-ridges and a solid disc in place of a solid loop. The head of the bow, hollow beneath, is decorated with raised lozenges as before, but here inlaid with white enamel and set in white enamel. The foot has faint side-grooves, ends in a double raised moulding, and was probably overlaid originally with crimson enamel. The catch-plate is perforated. Probably Antonine. From XXVIII s. Unstratified.

4. Triangular white glass bead with embossed corner spirals inlaid with yellow (vitreous?) paste. The type apparently occurs in Italy in the Villanovan period. Cf. Beck, *Classification and Nomenclature of Beads and Pendants in Archaeologia*, lxvii, 1-76, fig. 34 b, A 10 c (Villanovan), and fig. 61 (Cumae, 600 B.C.). An identical example (undated) is figured in Waring, *Rude Stone Monuments*, pl. 53, fig. 9a ('from the Orkneys'). Found near burials to the north of XXIV s (see p. 230 above).

5. Length of lead piping of $4\frac{1}{4}$ in. bore, comprising two conjoined sections respectively 6 ft. 10 in. and 3 ft. 8 in. (incomplete) long. Each section consists of a strip of lead, roughly 1 ft. 1 in. wide and $\frac{1}{4}$ in. thick, bent to the form of a cylinder, the two edges meeting in a butt-joint which is soldered. The end of the one section tapers slightly so as to fit into the end of the other, the joint being held in position by a collar of lead, 6 in. wide, obtained by running molten lead around the joint. Found in XXVIII s leading from the baths into the covered drain skirting the building on the west (see plan, pl. LXXVII).

4. SAMIAN WARE

Works referred to are listed on p. 280 below.

Plain Forms

S 1-2, in XXVII s beneath opus signinum floor of Room 5. S 3-4, in XXVII s in charcoal layer in Room 7. S 5-9, in XXVII s beneath paved floor of Room 6. S 10-12, in XXVII s in floor of Room 4 with fragmentary amphora bearing the stamp of the potter C. Antonius Quietus. S 13-14, in passage-way between XXVII s and XVIII s. S 15, in XXVIII s in hypocaust of Room 12.

- (S 1) Drag. 27 (small). Good ware and glaze. *Period*: Trajan.
- (S 2) Drag. 33. Poorish ware and glaze. *Period*: Hadrian-Antonine.
- (S 3) Drag. 18. Good (thin) ware and glaze. *Period*: Flavian.
- (S 4) Drag. 18/31. Good ware and glaze. *Period*: Trajan.
- (S 5) Drag. 18. Good ware and glaze. *Period*: Flavian.
- (S 6) Drag. 18. Good (heavy) ware and glaze. *Period*: Trajan.
- (S 7) Drag. 18/31. Good ware and glaze. *Period*: Trajan.

- (S8) Drag. 33. Poorish ware and glaze. *Period*: Hadrian-Antonine.
 (S9) Ritt. 129. Good ware and glaze. Closely similar to bowls found at Gelligaer (cf. O. & P., pl. LXXI, 16). *Period*: Domitian-Hadrian.
 (S10) Drag. 18/31. Good ware and glaze. *Period*: Trajan.
 (S11) Drag. 33. Good ware and (matt) glaze. *Period*: Trajan.
 (S12) Drag. 36. Good (thin) ware and glaze. *Period*: Trajan-Hadrian.
 (S13) Drag. 27 (small). Good (thin) ware and glaze. *Period*: Flavian.
 (S14) Drag. 33. Good ware and glaze. *Period*: Trajan.
 (S15) Drag. 31. Fairly good ware and glaze. *Period*: Hadrian-Antonine.

Decorated Forms

S16. *Fragments of this bowl were found in four separate places in and around XXVII s, as follows: (a) beneath opus signinum floor of Room 5; (b) in charcoal layer in Room 7; (c) beneath paved floor of Room 6; (d) in passage-way between XXVII s and XVIII s. S17-26, in XXVII s beneath opus signinum floor of Room 5. S27, in XXVII s, in charcoal layer in Room 7. S28-34, in XXVII s beneath paved floor of Room 6. S35-6, in XXVII s in floor of Room 4 with fragmentary amphora bearing the stamp of the potter C. Antonius Quietus. S37-8, in passage-way between XXVII s and XXVIII s. S39, in XXVIII s level with footings of plinth to west of entrance (?) to peristyle of Period II. S40, in drain beneath road to north of XXIV s. S41-62, in XXVII s. Unstratified. S63-77 in XXVIII s. Unstratified.*

Fig. 3 and pl. LXXXIV, fig. 1.

S16. Drag. 37 (transitional). Good ware and glaze. Band of anchor-ornaments (Walters, M 1334, reversed) in place of ovolo-moulding. *Upper frieze*: small tendril pattern (*ibid.*, pl. xxxvii, 28). *Lower frieze*: scroll pattern, upper and lower spaces enclosing double leaf (D. 1161—CINNAMUS) mounted on reel-ornament, alternately upright and inverted. Below: band of large rosettes (D. 1182—GRANIUS)—a favourite East Gaulish motive (cf. Fölzer *passim*). Two rivet-holes, one containing lead rivet. *Period*: Trajan.

S17. Drag. 37. Good ware and glaze. 'Free style' decoration: (i) lion to *r.* (similar to D. 750); (ii) large rosette (D. 1182—GRANIUS); (iii) animal (indeterminate) to *l.*; (iv) small male figure (incomplete) to *r.* *Period*: Trajan-Hadrian.

S18. Drag. 37. Good ware and glaze. Fragment of large foliated tendril-pattern with pairs (?) of vine-leaves in the alternate spaces. Below: straight wreath. *Period*: Trajan.

S19. Drag. 37. Good ware and glaze. Fragment with festoon containing bird to *r.* (similar to D. 1037). *Period*: Trajan.

S20. Drag. 37. Good ware and glaze. Fragment with lion to *r.* (similar to D. 754, reversed). *Period*: Trajan.

S21. Drag. 30. Good ware and glaze. Fragment with traces of panel decoration. *Period*: probably Flavian.

S 22. Drag. 37. Good ware and glaze. Fragment with ovolo moulding. *Period*: Hadrian.

S 23. Drag. 37 (?). Good ware and glaze. Fragment of base. *Period*: Hadrian.

S 24-25. Drag. 37 (?). Fragments of rims. *Period*: Trajan-Hadrian.

S 26. Drag. 37 (transitional). Good ware and glaze. Fragment with ovolo moulding and palmette (incomplete). *Period*: Domitian-Trajan.

S 27. Drag. 37 (small). Fine yellowish ware and bright orange glaze. Fragment with rouletted technique in two friezes (cf. O. & P., pl. LXXV, 6, and pp. 221, 222). *Period*: Hadrian-Antonine.

S 28. Drag. 29. Good (thick) ware and glaze. *Upper frieze*: panel (incomplete) and festoon pattern. *Lower frieze*: lion to *r.* (similar to D. 734) with representation of rocks in field. *Period*: Domitian-Trajan.

S 29. Drag. 37 (? transitional). Good (thin) ware and glaze. Part of foliated tendril (cf. Knorr, pl. XXIII, A—COELUS). *Period*: Flavian.

S 30. Drag. 37. Good ware and glaze. Fragment with part of cruciform ornament (similar to Walters, pl. XL, 10). *Period*: Domitian-Trajan.

S 31-2. Drag. 37. Good ware and glaze. Fragments of rims with ovolo moulding. *Period*: Trajan.

S 33. Drag. 37 (small). Good ware and glaze. Part of large tendril pattern enclosing 'arrowheads'. *Period*: Domitian-Trajan.

S 34. Form doubtful. Good ware and glaze. Fragment of rim (burnt). *Period*: Flavian.

S 35. Drag. 37. Good ware and glaze. Part of large foliated tendril pattern (generally similar to *J.R.S.*, iv, 1914, pl. x, 51, lower frieze—Pompeii) with bird to *r.* looking back (? D. 1009—BANUUS, PATERNUS) between two leaves (Knorr, fig. 12, 10) and small bird to *r.* (D. 1046—Lezoux) in loop. *Period*: Domitian-Trajan.

S 36. Drag. 37. Good ware and glaze. Fragment with part of large foliated tendril pattern. *Period*: Trajan-Hadrian.

S 37. Drag. 37 (transitional). Good ware and glaze. *Upper frieze*: panelled off (i) part of cruciform-ornament (perhaps Walters, pl. XL, 6); (ii) human foot (rest of figure wanting). *Lower frieze*: foliated tendril pattern with palm-leaves (D. 1169—Montans). *Period*: Domitian-Trajan.

S 38. Drag. 37. Good ware and glaze. Medallions and panels: (i) part of medallion; (ii) base of altar (?) over grass-tuft. *Period*: Trajan-Hadrian.

S 39. Drag. 37. Good ware and glaze. Fragment with parts of three medallions, with small figure to *l.* (similar to D. 136) and two rosettes, all in field below. *Period*: Domitian-Trajan.

S 40. Drag. 37. Good (thin) ware and glaze. Fragment of rim. *Period*: Trajan.

S 41. Drag. 37 (small). Good ware and glaze. Single band of conventional festoon pattern with cunciform leaves and stipules (O. & P., pl. XI, 2—Newstead I). Below: narrow band of nondescript leaves in pairs. *Period*: Domitian-Trajan.



Fig. 3. Samian Pottery.

S 42. Drag. 37 (small). Good ware, fairly good glaze. Panel decoration : (i) double vertical panel—incomplete ; (ii) narrow panel of four rings set vertically ; (iii) double vertical panel, upper compartment—medallion containing pygmy to *r.* (similar to D 437 a), lower—leaf (?) ; (iv) = (ii) ; (v) double vertical panel, upper compartment—festoon containing tiger (?) to *r.* (similar to D. 798), lower—hare to *l.* (similar to Knorr, pl. 67, 9) ; (vi) = (ii). *Period* : Hadrian.

S 43 *a-b*. Drag. 37 (large). Good ware and glaze. Panels of semi-‘free style’ decoration : (i) Satyr to front (D. 325) and Venus to front (D 184—PUTRIU, CINNAMUS, DOECCUS) ; (ii) erotic scene ; (iii) nude bearded male figure (Hercules ?) standing to front ; (iv) = (ii) ; (v) = (i) ; and repeat. *Period* : Trajan-Hadrian.

S 44. Déch. form doubtful. Good thin orange ware, bright glaze. Fragment with part of foliated tendril pattern. *Period* : Hadrian.

S 45. Drag. 30. Good (thick) ware and glaze. Panel decoration : (i) narrow horizontal panel (incomplete) with crossed cables, reel-ornament, and small rings in corners. *Period* : Hadrian.

S 46. Fairly good ware and glaze. Panel decoration : (i) male figure to *r.* (D. 385) ; (ii) ? festoon (incomplete). *Period* : Hadrian.

S 47. Drag. 37 (small). Good ware and glaze. ‘Free style’ decoration : (i) animal to *l.* (incomplete) ; (ii) mask to *r.* (D. 703—BUTRIO, LIBERTUS) ; (iii) animal to *r.* (incomplete). *Period* : Trajan-Hadrian.

S 48. Drag. 37. Good ware and glaze. Panels separated by vine-shrubs (?). Below : wreath of anchor-ornaments (Walters, pl. xxxiv, 36). *Period* : Trajan-Hadrian.

S 49. Drag. 37. Good ware and glaze. Panel decoration : (i) double vertical panel (incomplete) ; (ii) Diana to *r.* (Ludowici, M 237). *Period* : Trajan-Hadrian.

S 50. Drag. 37. Good ware and glaze. Part of large foliated tendril pattern, spaces containing large leaf (similar to D. 1167) alternately upright and inverted, with ring and large rosette (Ludowici, O 82) in field. *Period* : Hadrian.

S 51. Drag. 37. Good ware and glaze. Part of large tendril pattern : (i) lower space panelled off, upper compartment containing cruciform (?) ornament (incomplete) ; (ii) upper space containing leaves (Knorr, pl. 23, 6—COELUS). *Period* : Trajan.

S 52. Drag. 37. Poorish ware and glaze. Panel decoration : (i) semi-‘free style’—Victory to *r.* (D. 484—ALBUCIUS, AVENTINUS, BANUUS, DECIMANUS) and male (?) figure to front (incomplete) ; (ii) ? medallion (incomplete). *Period* : Hadrian-Antonine.

S 53. Drag. 37. Good ware and glaze. Panel decoration : (i) lioness (?) to *l.* (D. 796—Lezoux) with grass-tufts and double (?) fleur-de-lis-ornament in field above ; (ii) Satyr to front (D. 354—ALBUCIUS, BANUUS, RENTIUS) with S-shaped tendril and three rings in field ; (iii) Apollo seated to *r.* (D. 52—CINNAMUS, PATERNUS). *Period* : Hadrian.

S 54. Drag. 37. Poor ware and glaze. Panel decoration : (i) medallion (incomplete) ; (ii) medallion containing hare to *r.* (incomplete) ; (iii) medallion (incomplete). *Period* : Antonine.

S 55. Drag. 37. Fairly good ware, poorish glaze. Part of large foliated tendril pattern. *Period*: Hadrian.

S 56. Drag. 37. Good ware and glaze. Fragment with festoon containing indeterminate object (? head of bear to *r.* or human mask to *l.* inverted). *Period*: Trajan-Hadrian.

S 57. Drag. 37 (transitional?). Good ware and glaze. *Upper frieze*: part of small tendril pattern, lower space containing animal to *l.* (incomplete). *Lower frieze*: leaf, tendril and rosette (? all part of a cruciform-ornament). *Period*: Domitian-Trajan.

S 58. Good ware and glaze. Fragment with part of a medallion. *Period*: Trajan-Hadrian.

S 59. Drag. 37. Good ware and glaze. Panel decoration: (i) caryatid (D. 655—ADVOCISUS, BUTRIO, CINNAMUS, DECIMANUS, DIVIXTUS, JULLINUS, LIBERTUS); (ii) cruciform-ornament. *Period*: Trajan.

S 60. Drag. 37. Good ware and glaze. Panel decoration: (i) small female (?) figure to front (D. 553) over candelabra (D. 1095); (ii) foliated cruciform-ornament; (iii) = (i); (iv) male figure to *l.* (D. 41—Vichy?). *Period*: Trajan.

S 61. Drag. 37. Good ware and glaze. Part of panel of 'arrowheads' and oblique zigzags. *Period*: Domitian-Trajan.

S 62. Drag. 37. Good ware and glaze. Panel decoration: (i) male figure (incomplete) to front (? D. 524—BUTRIO, LAXTUCISSA, LIBERTUS, JANUARIUS); (ii) basket of fruit on tripod (Fölzer, pl. xxv, 80—La Madeleine). *Period*: Trajan.

S 63. Drag. 37. Poorish ware and glaze. Panel decoration: (i) narrow vertical panel with bird (incomplete to *l.* above, male figure to *l.* (Ludowici, M 44) below; (ii) medallion containing bird to *l.* (Ludowici, T 228); (iii) = (i); and repeat (?). *Period*: Hadrian-Antonine.

S 64. Drag. 37. Good ware and glaze. Panel decoration: (i) double vertical panel, upper compartment—incomplete, lower—double; fleur-de-lis-ornament (Ludowici, O 184—COBNERTUS); (ii) incomplete. *Period*: Trajan-Hadrian.

S 65. Drag. 37. Good ware and glaze. Part of medallion with incomplete human figure to *l.* (? D. 534 a—ADVOCISUS). *Period*: Trajan.

S 66. Drag. 37. Good ware and glaze. Large foliated tendril pattern (generally to Knorr, pl. 43 A): (i) lower space panelled off, upper compartment—pinnate leaves, lower—dog to *r.* (Knorr, pl. 57, 6—MERCATOR); (ii) upper space—leaf (similar to Knorr, 8, 21 c) and bird to *l.* looking backward (D. 1036—LIBERTUS). *Period*: Domitian-Trajan.

S 67. Drag. 37. Good ware and glaze. Fragment with scroll ornament. *Period*: Hadrian.

S 68. Drag. 37. Good ware and glaze. Panel decoration: (i) human figure (incomplete) holding bow (? D. 67—ALBUCIUS); (ii) medallion containing goat to *r.* (D. 889—CINNAMUS); (iii) incomplete. *Period*: Trajan.

S 69. Drag. 30(?). Good ware and glaze. Cupid seated to *l.* (D. 261—PATERNUS). *Period*: Hadrian.

S 70. Drag. 30. Good ware and glaze. Fragment with traces of medallions and panels. *Period*: Trajan-Hadrian.

S 71. Drag. 29. Good ware and glaze. *Upper frieze*: panelled off: (i) sphinx to *l.* (D. 497—**PATERNUS**) with monogram in field; (ii) stag to *r.* (similar to D. 847 (but without the 'ova')—**DOCCIUS**) with **DD** monogram in field. For a full discussion of this fragment see Wheeler, *The Roman Fort near Brecon*, p. 195. See also under 'Potters' Stamps' (below). *Period*: Trajan.

S 72-3. Drag. 29. Good ware and glaze. Fragments of rouletted rims. *Period*: Flavian.

S 74. Drag. 30. Good ware and glaze. Panel decoration: (i) double (?) vertical panel, upper compartment—animal (incomplete) to *l.* (similar to Ludowici, T 203), lower—? divided horizontally, left-hand compartment (incomplete) containing two small rosettes set vertically (Ludowici, O 103) and bird to *r.* looking back (D. 1009)—**BANUUS, PATERNUS** over reel-ornament, right-hand compartment wanting. *Period*: Trajan-Hadrian.

S 75. Drag. 37. Fairly good ware and glaze. Fragment with part of double vertical panel (?), upper compartment—traces of representations of rocks (?), lower (incomplete)—rosette. *Period*: Trajan-Hadrian.

S 76. Drag. 37 (transitional). Fairly good ware and glaze. Part of palmette (variant of D. 1151) with traces of stamp label superimposed. *Period*: Trajan.

S 77. Knorr 78. Good ware and glaze. Fragment of rim with traces of panelled upper frieze. *Period*: Flavian.

5. POTTERS' STAMPS

(a) *On Samian ware*

P 1. **OF·L·C[OS·VI]RIL**. L. Cosius Virilis. Drag. 18. Good ware and glaze. O. & P., p. 80. *Period*: Flavian. From XXVIII s. Unstratified.

P 2. **DAM** Daminus. Drag. 33. Good (thin) ware and glaze. *Period*: Hadrian or earlier (?). From XXVII s. Unstratified.

P 3. **DD** Doeccus. Drag. 29. See S 71 above and reference there given. *Period*: Trajan. From XXVIII s. Unstratified.

P 4. **FVSCI** Fuscus. Drag. (?). Poor ware, fairly good glaze. O. & P., p. 81, records the stamp of a potter Fuscus who worked at La Graufesenque in the Flavian period. The present stamp, however, differs in form from that recorded, while the ware suggests a Central or even East Gaulish provenance with correspondingly later date. It may be noted that the stamp occurs at Arnburg (*O.R.L.*, No. 16), Neckarburken (*ib.*, no. 53), and Stockstadt (*ib.*, No. 33). *Period*: Hadrian (?). From XXVII s. Unstratified.

P 5. **MART** Martius. Drag. 33. Fairly good ware and glaze. The present potter worked at Lezoux and Lavoye in the Trajan-Antonine period, and is to be distinguished from the Flavian potter Martius of La Graufesenque. See O. & P., pp. 82 and 119. *Period*: Trajan-Antonine. From XXVII s. Unstratified.

P 6. MAXM•IN Maximinus. Drag. 33. Poorish ware, fairly good glaze. Probably an East Gaulish potter. See *Silchester*, p. 237; *Wroxeter*, 1914, p. 48. *Period*: Antonine (?). From XXVII s. Unstratified.

P 7. PATNAFE Patna. Drag. 53. Fairly good (Lezoux?) ware and glaze. See *Silchester*, p. 245. *Period*: Hadrian (?). From XXVII s. Unstratified.

P 8. SACRIL•I•M. Sacrilus (*al.* Sacrilus). Drag. 33. Fairly good ware and glaze. For this potter see *Wroxeter*, 1914, p. 42; O. & P., pp. 122, 200, 205. *Period*: Antonine. From XXVII s. Unstratified.

(b) *On coarse ware*

Amphorae

P 9. CANTO QV. Reading uncertain, but possibly C•ANTO(NI)•QV(IETI). For this potter see *Brecon*, p. 246; *Richborough*, i, p. 84; ii, p. 94. From XXVII s, in north-eastern corner of Room 4, with Samian sherds of the Domitian-Hadrian period.

Mortaria

P 10. MATVGEN Matugenus. This potter worked at Montans in the Nero-Vespasian period. Found in the passage-way between XXIV s and XXVII s.

6. COARSE WARES

The following references are additional to those listed on p. 283 below:

Bushe-Fox, *Corbridge Reports*, 1906-14.

May, *The Roman Pottery in York Museum*.

Wheeler, 'A "Romano-Celtic" Temple near Harlow, Essex', in *Antiquaries Journal*, viii, pp. 300-26.

C 1 in drain beneath road to north of XXIV s. C 2-15, in XXVII s beneath opus signinum floor of Room 5. C 16-21, in XXVII s in charcoal layer in Room 7. C 22-36, in XXVII s beneath paved floor of Room 6. C 37-50. Unstratified.

Fig. 4

C 1. Large olla of grey ware. Early second-century type. Found in association with a sherd of Samian form 37 of the Trajanic period (S 40 above).

C 2-15. With this series occurred sherds of Samian forms 27, 33, and 37 (S 1-2 and 16 above) of the Trajan-Antonine period.

C 2-10. Ollae. C 2, wide-mouthed, of hard light grey ware. C 4, with rubbed trellis-pattern and traces of darker coating on exterior shoulder. C 5-10, of black burnished ware, C 5 and C 10 with rubbed trellis pattern. All these types belong to the period late first-second century A.D. C 10 is much later. The overhanging rim places it not earlier than the fourth century. Cf. *Balmuildy*, pp. 85-8; *Brecon*, C 43 4 and C 73; *Corbridge*, 1911, p. 39; *Segontium*, C 54-7.

C 11. Straight-sided, flat-bottomed open bowl, with flat everted rim of hard grey ware with darker slip. Bowls of this general type seem to have lasted for a very long period, and it is impossible to date them with any certainty. Those, however, with wide

flat rims like the present example appear to be earlier than those in which the rim is narrow and rounded. Examples of the former occur at Balmuildy, Corbridge, Newstead, Poltrossburn, and Silchester, in every case dating from the early or middle second century. Cf. *Balmuildy*, pp. 89-90, and *Corbridge*, 1911, p. 41.

C 12. Flanged bowl of fine hard orange-buff ware with traces of pinkish-red slip. Cf. *Brecon*, C 35, dated 100-40.

C 13. Steep-sided dish of hard fine grey ware with intersecting scored lines on exterior wall. The type probably had a long life, and lacks features for precise dating. It occurs at Newstead in the Antonine period. See *Newstead*, pl. 41; *Lowbury Hill*, fig. 16, 23-5; *New Forest*, pl. xvii, 9.

C 14. Bowl of fine grey ware with traces of darker slip. Around body immediately below exterior rim a plain band defined by a wide shallow groove above and a faint cordon below. Body below ornamented with rouletted diamond pattern. The bowl is an imitation of Samian form 37 similar to *Newstead*, pl. xlviii, 44, which is apparently of Antonine date. Cf. also *York*, pl. xix, 13.

C 15. Flanged bowl of hard fine pinkish ware with grey core. White slip with blotches of red. A late first to early second-century type.

C 16-21. This group occurred in association with a denarius of Caracalla of date 202, found in mint condition, and sherds of Samian forms 18, 18/31, and 37 (S 3-4, 16, and 27 above) of the Domitian-Antonine period.

C 16-19. Ollae. C 16-17, large vessels of good thin buff ware with girth-grooves around shoulder. For the derivation of the type see *Brecon*, C 22. The fairly well-defined shoulder-grooves of the present example suggest a mid-second-century date. C 18, of hard fine grey ware. Early second-century type. Cf. *Wroxeter*, 1912, 32.

C 19. Small olla of coarse grey ware with black slip. This type appears to have lasted throughout the second century. Cf. *Brecon*, C 61.

C 20. Straight-sided bowl of black burnished ware with flat everted rim and slight chamfer above base. For the type see C 11 above. The presence of the chamfer, which disappears in the later examples of the type, suggests an early second-century date. Cf. *Brecon*, C 39.

C 21. Flanged bowl of fine buff ware with traces of mica coating, identical in form with *Brecon*, C 35, dated c. 100-40.

C 22-36. This group was found in association with a 'second brass' of Hadrian of date 119 and sherds of Samian forms 18, 18/31, 33, Ritt. 129, 29 and 37 (S 5-9, 16, and 28-34 above) of the Domitian-Antonine period.

C 22-7. Ollae. C 22, of coarse light brownish-grey ware with darker slip, a native fabric. Heavy roll rim. C 23, of fine thin light grey ware with faint cordon round neck. C 24, similar, but of coarser ware. C 25, of coarse grey ware black-coated within and with light brown burnished surface to rim and shoulder without. Rubbed trellis-pattern around body. C 26, hand-made, with slightly outbent lip, of coarse grey ware with darker burnished surface. Cf. *Richborough*, I, 57. C 27, of black ware with burnished

rim and exterior shoulder and rubbed trellis-pattern around body. None of these types need be later than the second century.

C 28-31. Straight-sided flanged bowls of so-called 'porringer' type. C 28-9, of black ware, the latter with intersecting scored lines of the outer wall. C 30-1, of grey

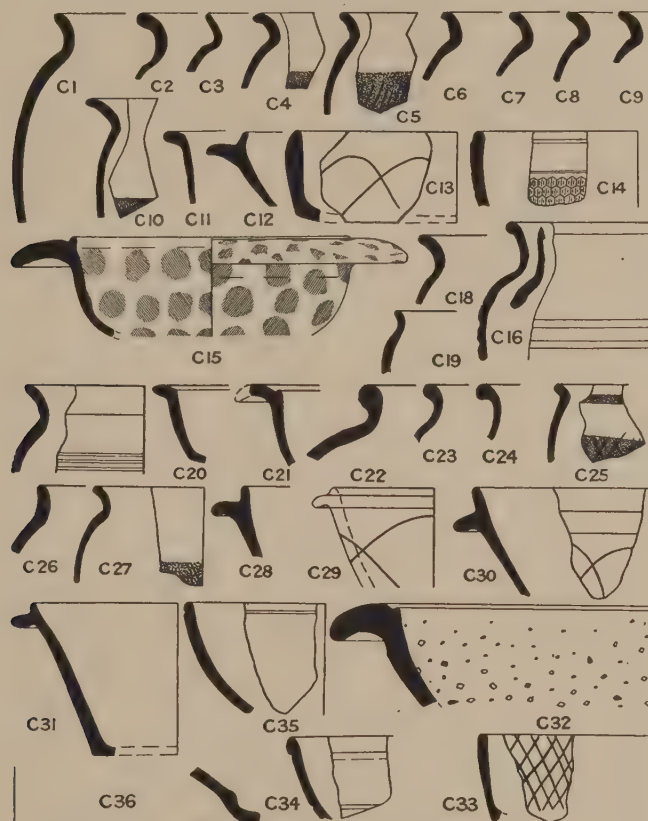


Fig. 4. Coarse pottery. ($\frac{1}{4}$)

ware, the former with surface of flange and inner wall burnished and scored lines as C 29. For the dating of these bowls see *Silchester*, 201. The present examples are probably not later than the second century, though the high rim of the last may possibly indicate a third-century date.

C 32. Mortarium of fine pinkish-buff ware; interior thinly sprinkled with large grains of white spar which occur also here and there on the surface of the rim. First-century type. See *Wroxeter*, 1912, fig. 19, no. 18.

C 33. Steep-sided dish of grey ware, bright brown burnished surface within, intersecting scored lines on exterior wall. Probably second century.

C 34. Bowl of hard fine light grey ware in imitation of Samian form 37, with heavy

moulded rim and plain band below defined by a deep groove. Second century. Cf. C 14 above.

C 35. Open bowl of pink ware with grey core. Bead-rim defined by a shallow groove. No certain parallel can be cited.

C 36. Pot-lid of hard grey ware. Probably second century. Cf. *Richborough*, I, 90-2.

C 37-50. This group is characteristic of types found in the surface-soil on the site.

C 37. Part of a large vessel of buff ware, with shallow cordon around the shoulder. Almost identical with *Brecon*, C 33, where it is cited as lasting into the Antonine period.

C 38. Bowl of fine hard light grey ware in imitation of Samian form 29, with rouletted decoration. Characteristic late first-century type, though found also in the second century as late as *c.* 120. See *Wroxeter*, 1912, 7.

C 39. Bowl of fine hard light red ware burnished on the outside. The shape imitates Samian form 37. Probably not later than the middle second century, though the type occurs in the Antonine period. See *Balmuildy*, pl. XLIX, 12-5.

C 40. Flanged bowl of pinkish buff ware mica-coated. Same type as C 12 above. Early second century.

C 41-8. Flanged mortaria. Characteristic Caerwent types. C 41-4, of hard white ware sprinkled within with grains of white and brown spar. C 42 is coated with a dull pink slip. C 45-6, of red ware with grey core and white slip; particles of red and white spar within. These types cannot be narrowly dated. They occur in fourth-century levels at Caerwent, Segontium, and Richborough, but it is probable that some of them go back into the third century. Cf. *Harlow*, fig. 5, 1-2. C 47-8, of dull red ware with grey core and red (imitation Samian) slip; inside, small grains of white and red spar. In the case of C 48 the upper and outer edges of the flange are ornamented with roulette pattern. C 47 is plain. For the type see *Segontium*, 50. Fourth century.

C 49. Carinated bowl, imitating Samian form 81, of deep pink ware with grey core and red (imitation Samian) slip. The exterior wall above the carination is decorated with oblique bands of impressed demi-rosettes and sunk notches and part of a scroll(?) of the former. Below the angle are two rows of roulette pattern forming shallow grooves. Cf. *Guildhall Museum Catalogue*, pl. XLVI, 1. For the distribution and dating of rosette-stamped ware, see *Richborough*, I, pp. 89-92. The present example is almost certainly fourth century.

C 50. Straight-sided bowl with flat everted rim, of grey ware with burnished surface within and intersecting scored lines on exterior wall. Second century.

C 51. Part of an urn of fine pinkish-buff ware bearing a human face in relief. Incised wavy lines represent the hair and notched ridges the eyebrows and beard(?). Face urns of this type occur commonly in Germany and more rarely in northern Gaul, England, and Scotland. This, however, appears to be the first recorded instance of the occurrence of the type in Wales. The date of the vessel is probably mid-second century. See Déchelette, ii, p. 522; *Balmuildy*, p. 94; *Carlisle*, p. 58; *York*, p. 21. Found in the passage-way between XXIV s and XXVII s.

II. THE SOUTHERN DEFENCES OF THE ROMAN TOWN (pl. LXXX)

In 1925 H.M. Office of Works took over the custody of the Roman south wall of Caerwent, and began the work of clearing and conserving the remains. This involved the removal of much material containing Roman relics, and therefore necessitated continuous archaeological supervision. Mr. C. R. Peers, H.M. Chief Inspector of Ancient Monuments, accordingly invited the National Museum of Wales to co-operate with the Office of Works in the matter, and Dr. R. E. M. Wheeler (then Director of the Museum) delegated the immediate supervision to the writer. The work was ultimately extended to include a detailed examination of the wall and its adjuncts, and was made easy by the unstinted help rendered throughout by the Office of Works through Sir Frank Baines, Mr. A. Heasman, and Mr. A. Trowbridge. Dr. Wheeler directed the work, and has helped with the preparation of this report. Acknowledgements are also due to Dr. Cyril Fox and Mr. W. J. Hemp.

General Description. The general character of the defences of Caerwent was investigated during the systematic excavations of 1899-1913,¹ and a careful account drawn up by the late Mr. John Ward.² The investigations then carried out, however, were limited in scope, and in the main stopped short of an exhaustive examination of individual features. They showed that the southern defences of the city included (1) an original earthen rampart, later reinforced by (2) a stone wall, and suggested that (3) the projecting towers or bastions attached to the wall were later still. The present work, while generally confirming the previous conclusions with regard to (1) and (2), has further established the existence of (4) two ditches external to the wall. The question of the absolute date of (2), however, was not elucidated, and must be regarded as still open.

The south wall of Caerwent (pl. LXXVIII, fig. 1) forms one of the two longer boundaries of the original roughly rectangular Roman city. Measured externally from the centre of the rounded south-western corner of the rectangle (no. 1 Break, pl. LXXX) to the approximate centre of the Norman motte that overlies the south-eastern, the wall is 1,509 ft. long. Its line is not straight, but bows slightly outwards towards the centre; no. 3 Counterfort exactly marks the point of maximum projection. The masonry of the wall is visible along its full length except for a gap of about 20 ft. to the east of the South Gate, where the wall tumbled bodily some seventeen or so years ago. The present height of the wall varies considerably, the best-preserved portion being that

¹ See especially *Archaeologia*, lviii, pp. 119-52; lix, pp. 87-124; lx, pp. 111-30.

² *Archaeologia Cambrensis*, 1916, pp. 1-36.

between the South Gate and no. 4 Bastion, where the remaining courses, twenty-eight in number, still attain to a maximum height of 17 ft.

The wall is bedded throughout on footings of rough boulders laid dry. The character of its masonry is more or less uniform. It consists of a core of pieces of limestone bedded roughly on edge in coarse mortar, encased between two faces of squared stones (pl. LXXIX, fig. 1). As the wall was certainly raised course by course, the core, where exposed, gives the effect of very irregular herring-bone work. The character of the mortar varies considerably from one part of the wall to another. As will be shown, this is not accidental, but due to the fact that the wall was built in a number of separate lengths. The mortar binding the core was run over the stones in a slurry which only imperfectly filled the interstices, so that there are frequent gaps. Except for the use of large flattish stones threading the core at irregular vertical intervals over a short length of wall near the south-east corner, there are no lacing courses, strictly so-called. Local limestone and—more sparingly—sandstone form the material of the wall. There is also here and there a fairly thick sprinkling of freestone.¹

The interior face of the wall is interrupted by a series of six buttress-like thickenings or projections. Two only of these were known to Mr. Ward, who conveniently termed them 'counterforts' and conjectured—with some probability—that they had originally supported flights of steps giving access to the rampart-walk along the top of the wall. The intervals between counterforts—with one exception—are nearly regular, and their dimensions approximately the same. All were originally covered for the greater part of their height by the earthen ramp that backed the wall (pl. LXXIX, fig. 2).

Attached to the exterior face of the wall is a series of six semi-octagonal hollow bastions. Until the present work three only of these (nos. 2, 3, and 4), all to the west of the South Gate, had been visible, and these had always been thought to represent the original number. Clearance operations against the exterior base of the wall, however, laid bare the foundations of three more—one (no. 1) towards the south-west corner and two (nos. 5 and 6) to the east of the South Gate.² None of the bastions is bonded into the main wall, but in at least one case there are definite traces of an attempt at toothing. The intervals between bastions are irregular.

The wall is pierced at a point some 116 ft. externally east of its true centre by the South Gate. This structure consists of a single arched passage-way,

¹ Notably near no. 4 bastion, where it is also freely employed in the quoins of the bastion itself. The point is perhaps not irrelevant to the question of the relative dates of the wall and the bastions.

² During the summer of 1930 a further bastion was found attached to the north wall of the town in close proximity to the north-west corner (see *Archaeologia Cambrensis*, 1931). It now seems likely therefore that all the Caerwent walls were equipped with bastions.

built separately from the wall itself, though almost certainly contemporaneously with it. The footings are, however, carried down below those of the wall. Like the North Gate, it has no flanking guard-rooms. The piers project beyond both faces of the wall, considerably in front, but only slightly behind, and originally carried the inner—still partly preserved—and outer arches of the gateway. These may in turn have supported either an overhead chamber or merely an open continuation of the rampart-walk. As it at present stands, the gateway is closed with a blocking of faced masonry, inserted in the later days of the Roman city's history.

South of the wall and at an average interval from it of 170 ft. is a well-marked ridge in the surface of the ground, strongly suggestive at first sight of the glacis of an original ditch-system. The ridge runs more or less parallel with the wall throughout its length, and sweeps round with both the south-west and the south-east corner; in the latter case, it converges markedly on the wall as it does so. As already stated, in order to test the reliability of these surface indications, a trial cutting was made across the level interval, and this revealed the sections of two ditches—an inner and an outer. These were respectively 28 ft. and 30 ft. wide and 7 ft. 6 in. and 7-8 ft. deep, and lay 38 ft. and 95 ft. from the foot of the main wall, as measured from wall-face to outer edge, the berm thus being 10 ft. The cutting showed nothing to account for the ridge, which may well be natural. But further investigation is necessary here.

Each of the above features may now be described in detail.

THE WALL

Mr. Ward had already suggested that the wall was constructed in comparatively short conjoined lengths, and had, in fact, laid bare one of the rough interior breaks or joints thus formed. An initial survey of the external face of the wall shed no light on the method of construction, the face being carried through in one plane. An examination of the internal crest of the wall, however, at once went to confirm Ward's hypothesis, and even to indicate, from slight but unmistakable irregularities in alignment and differences of masonry, where successive breaks were likely to be found. It was decided, therefore, to trench the crest on this side along its entire length, starting from the break previously discovered by Ward in the south-west corner. Briefly, the result was the recovery of a total, including as breaks the two straight joints made by the wall with the piers of the South Gate, of fifteen breaks, showing that—allowing for a sixteenth break under the Norman motte that overlies the south-east corner—the wall, as distinct from the footings which in general are carried through, was constructed in fifteen different lengths. There is no apparent correspondence or ratio between the lengths to show on what principle

the work was apportioned, but an examination of successive breaks reveals the general scheme of construction.

*No. 1 Break.*¹ This is the one discovered by Ward lying centrally in the curve of the south-west corner. It has an east (bottom) to west (top) slant. The relationship of the two wall-lengths is shown in pl. LXXX. The sharply converging off-sets of the eastern wall-length show, conformably with the slant of the Break itself, that this wall-length, which is generally of poorer work than the other, was built last. The footings here have a projection of 1 ft. 9 in.

No. 2 Break lies 48 ft. 6 in. east of no. 1 at the point where the rounded south-west corner merges into the straight.² The slant of the Break is, as before, east to west, showing that here also the eastern wall-length was the later built. The footings have a maximum projection of 1 ft. 9 in. and a depth of 6 ft. In this case the Break can be made out on the exterior face of the wall—as a variation in the off-sets.

No. 3 Break lies 30 ft. east of no. 2. It shows as a sudden set-back in the upper half of the face. This is due to the fact that, while the western wall-length below its upper off-sets is built vertical, the eastern, after rising vertically to a point 3 ft. above the projecting footings is set back by off-sets and then carried up with a slight batter. The alternate projecting bonds of the western wall-length are evidence that this latter was built first, and, as no attempt was made to merge the other wall-length into it, the Break shows as a jagged overlap. The footings project 1 ft. 1 in., and are 6 ft. deep (pl. LXXIX, fig. 3).

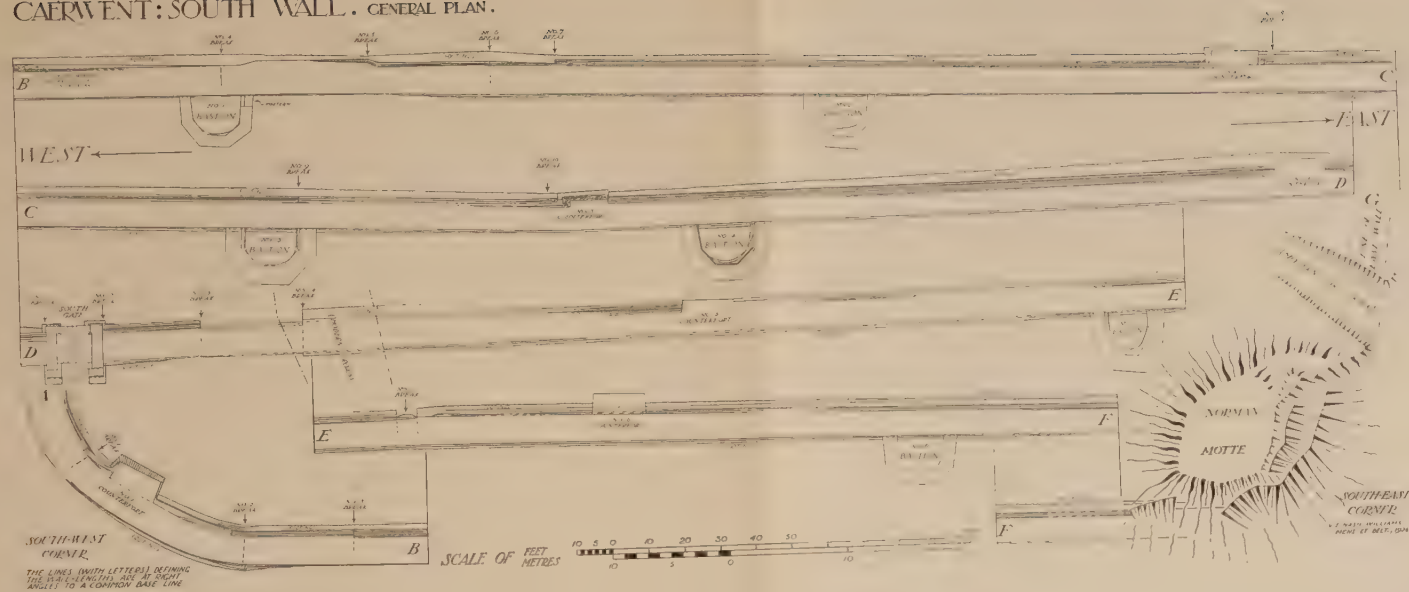
No. 4 Break lies 77 ft. 6 in. east of no. 3. It has an east to west slant, showing that the western wall-length was built first. The projecting bonds in this latter wall-end are additional evidence of the fact. The off-sets of the western wall-length gradually converge towards this end, dying away entirely into the flat wall-face at the break. The reason for this is not apparent. The masonry of the eastern wall-length is much inferior to that of the other, though both are poor. The footings, which are composed of small stones, poorly laid, have a projection of 4 ft. 3 in.

No. 5 Break lies 41 ft. east of no. 4. It slants irregularly from west to east. The eastern wall-length, therefore, was the earlier. The poor masonry of both lengths makes it clear that they were built either after or—more probably—simultaneously with the raising of the earthen ramp behind them. The face between nos. 4 and 5 Breaks, that is, of the present western wall-length,

¹ The Breaks are numbered from west to east.

² A similar Break was found in the Roman wall at York immediately north-west of the east corner. '... There was a distinct join in the masonry from top to bottom. At the far side of that join the facing was rougher than on the other, and the foundation was not laid so deep.' *Journal of Roman Studies*, xv (1925), p. 187.

CAERWENT: SOUTH WALL. GENERAL PLAN.



Published by the Society of Antiquaries of London, 1930

shows internally as an irregular bulge in the wall. The reason for this will be suggested later (below, p. 271). The footings are, as before, of small stones, with a projection of 9 in.

No. 6 Break lies 34 ft. east of no. 5. Its slant is from west to east, making the eastern wall-length the earlier. Probably here again neither length was built free, but against the ramp already raised. The footings project 1 ft. 9 in.

No. 7 Break lies 18 ft. east of no. 6. The eastern wall-length is the earlier. Its lower half projects westwards 5 ft. beyond the upper. Consequently the upper half of the other wall-length overlaps it for that distance. The masonry of the eastern wall-length is good, and carried up in regular courses. Unlike that of the other, it was obviously built free, as is proved by the presence of putlog holes in its interior face. The footings project 1-2 ft.

No. 8 Break lies 201 ft. 6 in. east of no. 7, immediately to the east of no. 2 Counterfort (pl. LXXX). Its slant is from east to west. The western wall-length is, therefore, the earlier. The footings project 1 ft. 9 in.

No. 9 Break lies 111 ft. east of no. 8. It is exactly vertical. The two wall-ends are carefully knit, but the projecting bonds of the western wall-length show that that is the earlier. The footings have a projection of 2 ft. 3 in., and a depth of 3 ft. 6 in. (pl. LXXIX, fig. 4).

No. 10 Break lies 69 ft. 6 in. east of no. 9, immediately to the west of no. 3 Counterfort. Its slant, from west to east, marks the eastern wall-length as the earlier. The footings project 1 ft. 9 in.

Nos. 11 and 12 Breaks. No. 11 Break lies 232 ft. east of no. 10. As already stated, it is the straight joint made by the wall with the western pier of the South Gate. Similarly no. 12 Break, distant from no. 11 the over-all width of the South Gate, that is, 15 ft. 4 in., is the straight joint made by the wall with the eastern pier. These breaks will be discussed in connexion with the South Gateway (below, p. 257).

No. 13 Break lies 27 ft. east of no. 12. It is remarkable as extending both to the exterior wall-face, where it was plainly visible, and to the footings. It is a vertical break, but the western wall-length is clearly the earlier. This is evidenced by two facts: first, the arrangement of the bonds of this wall-length, and secondly, the fact that its wall-face is carried down 4 ft. below the bottom of the eastern wall-face. The difference in depth is visible also on the exterior face of the wall. The footings of the eastern wall-length are only 2 ft. 6 in. deep so that both the eastern wall-face and footings combined are shallower than the western wall-face alone. The footings of the latter are 2 ft. 9 in. deep. The footings of the eastern wall-length appear to have been laid above a road-surface of broken tile. An explanation of the peculiar features of this break will be suggested later (below, p. 271).

No. 14 Break lies 27 ft. 8 in. east of no. 13. Here the modern road crosses the line of the wall, so that only its bottom course and footings are preserved. The break shows as a sudden thickening in the wall, the eastern wall-length being 10 in. thicker than the western and projecting inwards by that amount.

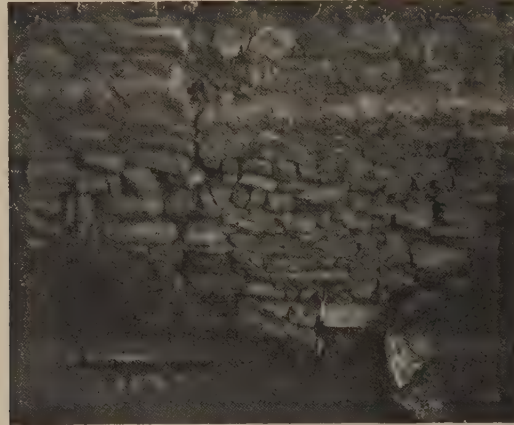


Fig. 5. No. 15 Break.

This wall-length is also carried deeper than the other; its bottom course lies 1 ft. 6 in. below the bottom course of the western wall-length. Similarly its footings project 2 ft. 9 in. while, the western footings are flush with the wall-face. The eastern wall-length is definitely the earlier.

No. 15 Break lies 270 ft. east of no. 14. In character it is unique in the whole wall (fig. 5). Actually it is a double break, representing a gap between the two adjacent wall-lengths later filled with masonry. The end of the western wall-length slants slightly from east to west in its lower courses and is then carried up vertical, with alternate projecting bonds. The eastern wall-length appears to have been raised in two builds. The lower half forms the one, the upper half the other. The end of the lower half slants sharply from west to east, so that the gap 5 ft. 6 in. wide at the bottom widens into 11 ft. 3 in. at the top. Apparently this side of the gap was then filled up vertically with a rough blocking of large stones and the upper half of the wall began from this edge. The reason for this is not clear, but the joints thus formed are unmistakable. The footings of the wall-length to the west of the gap project 1 ft., those of the wall-length to the east, 2 ft. The masonry-filling of the gap proper is of the roughest possible character, consisting of large stones bedded irregularly and without any attempt at facing. On the north side of the gap and apparently extending through it are traces of cobbling, suggesting that the gap had originally coincided with a roadway through the wall. A similar feature has already been noted in the case of no. 13 Break.

The evidence from the breaks may now be tabulated:

Distances between Breaks

		ft. in.			ft. in.
No. 1 Break - No. 2 Break	=	48 6	No. 9 Break - No. 10 Break	=	69 6
" 2 " - " 3 "	=	30 0	" 10 " - " 11 "	=	232 0
" 3 " - " 4 "	=	77 6	" 11 " - " 12 "	=	15 4 ¹
" 4 " - " 5 "	=	41 0	" 12 " - " 13 "	=	27 0
" 5 " - " 6 "	=	34 0	" 13 " - " 14 "	=	27 8
" 6 " - " 7 "	=	18 0	" 14 " - " 15 (W.) "	=	270 0
" 7 " - " 8 "	=	201 6	" 15 (E.) " - Motte (W. edge)	=	232 6 ²
" 8 " - " 9 "	=	111 0			

Character of Breaks

Break	Slant (actual or virtual)	Wall-length first built	Maximum thickness of wall		Projection of Footings				Remarks
			West	East	Internal		External		
					West	East	West	East	
			ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	
1.	East to west	Western	10 4	10 4	1 9	1 9	— —	— —	} Straight joints with piers of South Gate Destroyed to footing-level
2.	" " "	"	10 0	9 9	1 10	1 10	0 7	0 7	
3.	" " "	"	10 1	10 1	1 1	1 1	0 6	0 6	
4.	" " "	"	8 3	8 3	4 3	4 3	— —	— —	
5.	West to east	Eastern	9 9	9 9	0 9	0 9	— —	— —	
6.	" " "	"	9 9	9 9	1 9	1 9	0 4	0 4	
7.	" " "	"	8 9	9 9	2 1	1 0	0 6	0 6	
8.	East to west	Western	10 1	10 1	1 9	1 9	— —	— —	
9.	" " "	"	9 2	9 2	2 3	2 3	0 11	0 11	
10.	West to east	Eastern	9 2	9 2	1 9	1 9	— —	— —	
11.	East to west	Western	9 3	— —	1 1	— —	— —	— —	
12.	West to east	Eastern	— —	10 11	— —	0 6	— —	0 6	
13.	East to west	Western	10 3	8 11	— —	— —	— —	0 3	
14.	West to east	Eastern	8 6	9 6	— —	2 9	0 3	0 6	
15.	Double	Western and eastern simultaneously	9 8	10 0	1 0	2 0	0 5	0 8	
16 (?).	?	?	?	?	?	?	?	?	

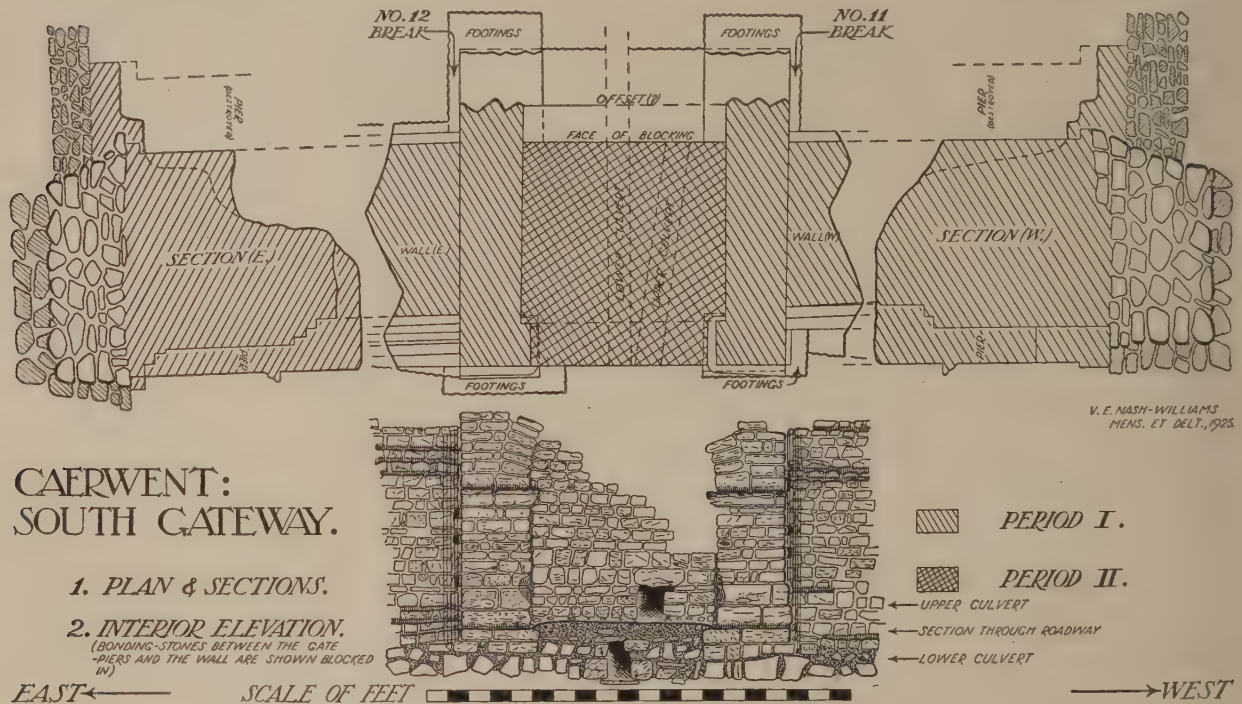
THE SOUTH GATEWAY (pl. LXXXI, fig. 2)

The South Gate has already been described as a single-arched structure without guard-rooms. Its over-all width across the back is 15 ft. 4 in. with west and east piers 3 ft. 3 in. and 3 ft. 4 in. wide respectively, thus leaving a passage-

¹ = the South Gate.

² or 286 ft. 6 in. to approximate internal centre of SE. corner.

way of 8 ft. 9 in. The piers project from the vertical wall-face 1 ft. 8 in. on the west and 1 ft. 3 in. on the east, each with base and moulded impost projecting about 5 in. on an average on all sides except those abutting on the main wall,



CAERWENT: SOUTH GATEWAY.

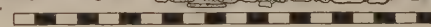
1. PLAN & SECTIONS.

2. INTERIOR ELEVATION.

(BONDING-STONES BETWEEN THE GATE-PIERS AND THE WALL ARE SHOWN BLOCKED IN)

EAST ←

SCALE OF FEET



PERIOD I.

PERIOD II.

← UPPER CULVERT

← SECTION THROUGH ROADWAY

← LOWER CULVERT

→ WEST

Fig. 6. South Gateway. Plan and interior elevation.

which are flat. The footings of the piers are carried down to a depth of 5 ft. 9 in. on the west and 5 ft. 3 in. on the east, that is, 9 in. and 1 ft. 9 in. respectively below the corresponding footings of the wall-lengths. The imposts are set at a height of 6 ft. 5 in. above the passage-way and originally carried the internal arch of the gateway. The springing of this arch is still preserved on both sides, and the piers remain to a maximum height of 3 ft. 6 in. above the imposts, or roughly 10 ft. above the original road surface. At a distance of 2 ft. from the interior face of the gate the piers are recessed back about 6 in. on either side. The recessed passage-way thus formed is 9 ft. 9 in. wide, and probably ended originally with outer returns corresponding to the inner. The position of these outer returns is doubtful as the front of the gateway has been entirely destroyed.¹ The piers project 4 ft. 3 in. beyond the exterior face of the main wall. The footings of the piers project 1 ft. 6-9 in. beyond, and at this limit are

¹ The exterior face of the projecting gate-piers not improbably marks the forward limit of these returns. See p. 259, note 1.



Fig. 2. South Gateway: exterior



Fig. 4. No. 4 Bastion, from E.



Fig. 1. Outer wall-face showing the putlog holes

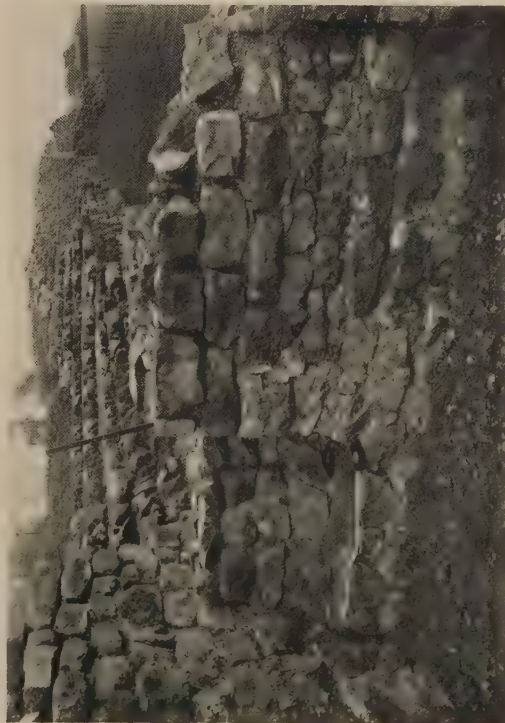


Fig. 3. No. 1 Bastion: sill of door in E. wall



Fig. 1. No. 1 Counterfort, from W.



Fig. 2. No. 3 Counterfort, from W.
and no. 10 Break



Fig. 3. No. 5 Counterfort, from W.

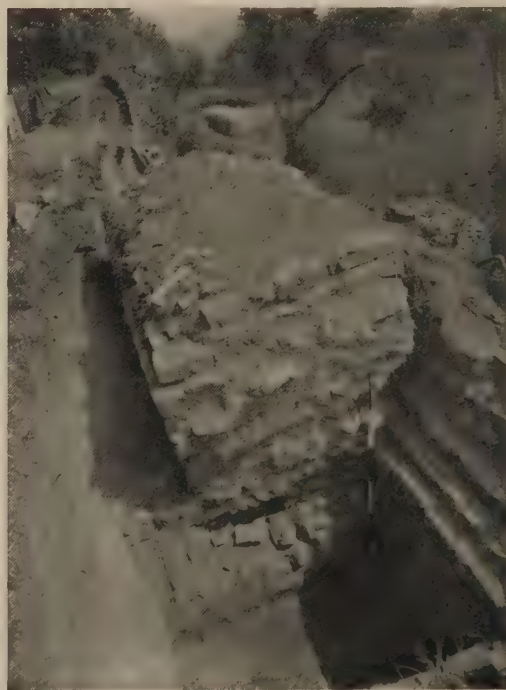


Fig. 4. No. 6 Counterfort, from W.

carried down to a depth of 2 ft. 10 in. on the west and 1 ft. 11 in. on the east. The gate is not bonded into the main wall on either side, piers and wall forming straight joints. Some attempt at toothing, however, is visible on the interior. This and the fact of the increased depth of the pier-footings over the wall-footings leave no doubt that the gate was built as a separate structure and the flanking wall-lengths carried up against it later. A possible break was found in the wall to the west of the gate slanting slightly east to west from the foot of the west pier. This would suggest that this wall-length, at any rate, was constructed almost simultaneously with the gate itself, a narrow gap being left between the two for the convenience of the gate-builders. But, in any case, the straight joints of the wall with the piers represent breaks. A section cut across the interior of the gateway revealed the original road-section. This was composed of a metalling of stones and iron clinkers 8 in. thick and slightly cambered. Beneath this road-level a slab-lined culvert, 1 ft. 9 in. deep by 1 ft. 1 in. wide, passes centrally through the gate.

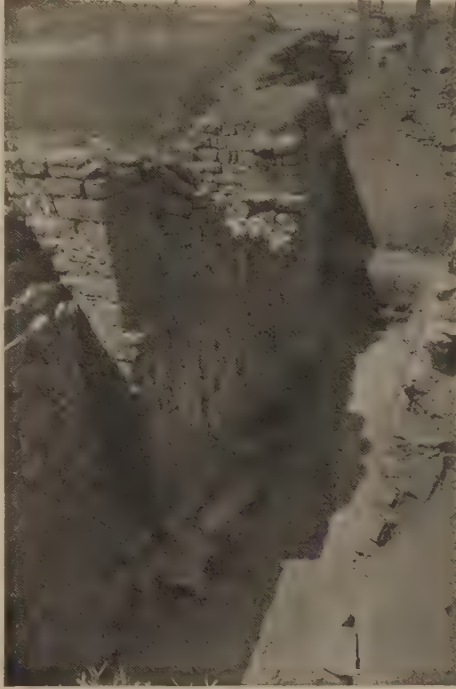


Fig. 7. South Gateway. Interior.

A partial cutting into the ramp behind the main wall immediately to the west of the gate revealed a line of fallen stone roofing-slabs following the downward slope of the ramp and suggesting the collapse of a slabbed roof. Whether the roof was that of a building adjoining the gate or of the gate itself could not be determined. But the line of debris was unmistakable (fig. 7).

At some later period in its history the South Gateway was blocked. The blocking consists of a mass of stones bedded in a coarse sandy mortar of poor quality, faced back and front. The internal face, which is carried through flush with the back of the projecting piers, is of good masonry regularly coursed. The external face, on the other hand, which is almost gone, continues the line of the main wall. The blocking of the passage-way, therefore, stopped short of the southern returns of the piers, which appear to have lain considerably in advance of the wall-face.¹ Through this blocking, to the west of the axis of the

¹ It is possible to reconstruct the destroyed front of the gateway with some degree of certainty. If the outer returns be allowed the same dimensions (i.e. width and inward projection) and offsets as

gate and oblique to its line, passes a second and later culvert, 1 ft. 8 in. deep by 1 ft. 3 in. wide; its floor is formed by the earlier roadway, and it is covered with massive slabs of stone carrying the superimposed blocking.

THE COUNTERFORTS (pl. LXXXII)

No. 1 Counterfort lies at an interval of 7 ft. 6 in. from no. 1 Break. At footing level it is 13 ft. 9 in. wide and projects 4 ft. 4 in. on the west and 6 ft. on the east, thus considerably overstepping the wall-footings which have here a projection of only 1 ft. 3 in. The counterfort is carried up for 10 ft. with a slight inward batter on all three sides, then vertical for the rest of its height. It stands to a present maximum height of 14 ft. 6 in., its measurements at the top, as preserved, being width, 12 ft. 9 in., projection on the west, 5 ft. 3 in., projection on the east, 6 ft. The west side of the counterfort is toothed into the main wall in two of its courses only, while on the east side the whole is bonded.

No. 2 Counterfort lies at an interval of 412 ft. from no. 1. The east side is laid actually on the wall-footings which here project 1 ft. 7 in.,¹ and with which it is flush. The west side, on the other hand, is bedded on a rough filling of large stones laid dry, carried up to a height of 6 ft. above the wall-footings. The back of the counterfort is battered outwards. The counterfort is preserved to a height of 13 ft. 6 in. above the wall-footings. At its present top it measures 13 ft. in width with a projection of 4 ft. on both west and east. The west side as found was much ruined, but had apparently not been toothed or bonded into the main wall. The east side appears to have been toothed into the main wall about every fifth or sixth course. The whole counterfort, which is of the poorest possible construction, has pulled away from the main wall, leaving an irregular gap of 3-6 in.

No. 3 Counterfort lies at an interval of 187 ft. 9 in. from no. 2, immediately to the east of no. 10 Break. Its condition as found shows that it was never finished by its builders. At footing level it is 14 ft. 6 in. wide, projects 2 ft. on the west and 2 ft. 3 in. on the east, and is carried up vertical to a height of 6 ft. 6 in. above the wall-footings. There it ends abruptly. But that its builders had intended to carry it higher is shown by the fact that alternate courses of

the inner, they can be shown to occupy the whole of the projecting piers between their forward edges and the existing (destroyed) front of the gate-jambs (see fig. 6). This suggests—and the present condition of the gateway is entirely consonant with the suggestion—(1) that the gate-front was deliberately dismantled so as to eliminate from the face of the defences an otherwise enclosed and covered space dead to the defenders; (2) that, therefore, the dismantling was contemporary with the blocking of the gateway. In the case of the North Gate, which also was blocked, there is definite evidence that the gate was already partially destroyed or dismantled before blocking, the blocking here being carried over the ruined lower half of the inner eastern pier.

¹ i.e. beyond the plinth course.

the wall have been left projecting, clearly to act as bonds to the upper half of the counterfort. The explanation of this irregularity probably lies in the fact that this counterfort immediately adjoins a break in the main wall. It is probable that the gang detailed to build the eastern wall-length, to which the counterfort belongs and which, it will be remembered, was the earlier built of the two, carried it up for part of its height, leaving the rest for the gang working on the western wall-length to complete; that then, for some reason unknown, the latter gang left this part of its task unfinished. Conformably with this view, the counterfort makes a straight joint with the wall on the west, but is bonded in on the east. A refuse-pit or pocket containing much burnt charcoal and two stamped Samian sherds was found in the reddish loam of the ramp at the back of this counterfort (see below, p. 272).

No. 4 Counterfort lies at an interval of 186 ft. from no. 3 and 15 ft. west of the South Gate. It was excavated and described by Dr. Ashby in 1904.¹ It is bedded on the wall-footings, which here project 3 ft. beyond the wall-face. At footing-level it is 13 ft. 3 in. wide and projects 1 ft. 5 in. on both west and east. It is carried up more or less vertical, and is preserved to a maximum-height of 14 ft., at which level it has a mean projection from the wall-face, here much set back, of nearly 4 ft. It is bonded into the main wall on both sides.

No. 5 Counterfort lies to the east of the South Gate and at an interval of 190 ft. 9 in. from no. 4. It is carried up nearly flush with the bottom off-sets of the main wall, which project 5 in. and 9 in. on the west and east respectively. The counterfort is 14 ft. wide and is built vertical. It stands to a present height of 16 ft. on the west and only 9 ft. 6 in. on the east, where it is much ruined. The notably shallow basal projection of the counterfort on the west is relatively much increased in its upper half by the setting back here of the face of the main wall. It is bonded into the main wall on this side, but apparently neither toothed nor bonded on the east. Behind this counterfort was a filling of black soil or refuse containing much stone and fragments of Samian and coarse wares (see below, p. 272). As seen in section, west and east, it formed a sort of V-shaped pocket in the clean reddish loam of the ramp. The pocket did not descend to the bottom of the counterfort, nor was it as wide except at the top. A similar pocket has already been noted behind no. 3 counterfort.

No. 6 Counterfort lies at an interval of 204 ft. from no. 5. It is of remarkably poor construction. It is bedded on a rough filling of small stones and masonry debris,² and is carried down to a depth of only 6 ft. below the present summit

¹ *Archaeologia*, lx, p. 117.

² Not improbably this debris, which included much painted wall-plaster, formed a pocket in the ramp similar to those behind nos. 3 and 5 counterforts. It was impossible to excavate behind no. 6 counterfort, owing to the risk of a fall.

FURTHER EXCAVATIONS AT

of the main wall, which is here about 11 ft. high. Thus only the lowest courses of this counterfort remain, and these show little or no attempt at facing. The counterfort is 14 ft. 6 in. wide and projects from the vertical wall-face 5 ft. 10 in. on the west and 5 ft. 11 in. on the east. It is not bonded into the main wall on either side, and has in fact completely pulled away from it, leaving a gap of nearly a foot.

The following tables summarize the evidence from the counterforts:

*Intervals between Counterforts*¹

				ft. in.					ft. in.				
No. 1	Counterfort	-	No. 2 Counterfort	=	412	0	No. 4	Counterfort	-	No. 2 Counterfort	=	190	9 ²
" 2	"	-	" 3 "	=	187	9	" 5	"	-	" 6 "	=	204	0
" 3	"	-	" 4 "	=	186	0	" 6	"	-	Motte (W. edge)	=	168	6 ³

Dimensions of Counterforts

No. of Counterfort	Width	Projection		Height above footings (as preserved)	Remarks
		West	East		
	ft. in.	ft. in.	ft. in.	ft. in.	
1.	12 9	5 3	6 0	14 6	
2.	13 0	4 0	4 0	13 6	
3.	14 6	2 0	2 3	6 6	
4.	13 3	4 0	4 0	14 0	Left unfinished by the builders. Situated 15 ft. to the west of the South Gate.
5.	14 0	- -	- -	16 0	
6.	14 6	5 10	5 11	- -	Counterfort has pulled away from the wall increasing its projection.

All the counterforts, with the exception of nos. 2 and 6, are bedded on the projecting footings of the main wall, into which they are either wholly or in part bonded or toothed. The west side of no. 2 counterfort is bedded on a

¹ Counterforts of similar character have been found attached to the interior face of the north wall also. 'At a distance of 65 ft. to the east of the gate a counterfort 15 ft. long projects inwards, to the amount of 1 foot at the west end and 2 ft. 2 in. at the east end. It lies in both cases right over the rough stone foundation of the wall. . . . At the west end the lower part for 3 ft. 6 in. above the top of the upper set-off is not bonded into the main wall. . . . At the back of the counterfort a mass of stones and mortar has been placed to give additional strength, breaking into the slope of the [primary ?] mound, which has been cut away to give room for it. . . . There are three weep-holes in the counterfort similar to those in the main wall. Another similar counterfort 200 ft. to the west of the gate is 13 ft. 6 in. wide, projecting 2 ft. inwards, while a third, 253 ft. to the east of the gate, is 13½ ft. wide and projects inwards 18 in.' *Archaeologia*, lix, pp. 94 f. and *Archaeologia Cambrensis*, 1916, pp. 12 f.

² This interval covering as it does the South Gate makes it reasonably certain that the counterforts were sited along the wall without reference to the gate (cf. the case of the North Gate above).

³ or 222 ft. 6 in. to the approximate internal centre of the SE. corner. On the analogy of the SW. corner there should be a seventh counterfort in the SE. corner (now covered by the Norman motte), probably at the mean interval of 180-90 ft.

filling of rough stones 6 ft. above the wall-footings, and on this side makes a straight joint with the wall. No. 6 counterfort rests on a filling of masonry debris, 5 ft. above the wall-footings, and is not bonded into the wall on either side; in the case of at least two (nos. 3 and 5) of the other counterforts the ramp backing the counterforts gave evidence of having been made up to its full height with a filling of refuse, quite distinct from the clean sandy loam which is the material of the ramp generally.¹

THE BASTIONS

No. 1 Bastion lies at an interval of 151 ft. 6 in. from no. 1 Break. It is one of the three new bastions discovered during the present work. Like all the Caerwent bastions, it is semi-octagonal in plan. It has an interior width across the back of 14 ft. 1 in. and a maximum interior projection of 11 ft. 3 in. Its walls taken in sequence from west to east are respectively 6 ft. 8 in., 5 ft. 4 in., 5 ft. 5 in., 5 ft. 4 in., 8 ft. 4 in. in internal length and 3 ft., 3 ft. 2 in., 3 ft. 2 in., 3 ft. 2 in., 3 ft. 2 in. thick. The thickness of the front walls below is increased on an average 3 in. by an offset within. This is carried round in a continuous semi-circle to form a sort of rough internal plinth at a height of 4 ft. 6 in. above the bottom of the bastion walls, or level with the footing-course of the main wall. The bottom of the plinth is level with the bottom of the footings of the main wall, the plinth itself having no footings strictly so called. The plinth is faced without, but left rough within. The main wall behind the bastion stands to a height of 7 ft. 6 in., and the back of the bastion about the same; the front, however, is ruined to within 1–2 ft. of the footing-plinth. The bastion is not bonded into the wall on either side. In the east wall is the sill of a door or postern (pl. LXXXI, fig. 3), a feature peculiar to this bastion alone. As found, the shell of the bastion was filled with an accumulation of soil, masonry debris, and refuse. In order, if possible, to elucidate the date of the bastion this filling was cleared. The section obtained is shown in fig. 8. The upper layers were of humus and masonry debris alternately, the humus presumably representing intervals between successive destructions. And this suggestion is strengthened by the angle at which the lumps of masonry lay. Below these upper layers was a layer about 6 in. in mean thickness of a mixture of earth, mortar, and masons' chippings running approximately level with the top of the plinths of the main and bastion

¹ It is noteworthy that counterforts almost identical in character with those at Caerwent and at intervals nearly the same occur along the town wall of Silchester. 'At intervals of about 200 ft. along the whole course of the wall are what look like internal buttresses. These are formed by carrying up the full thickness of the masonry, 9½ ft., from the bottom. The breadth of these buttresses is usually 12 ft., but some are as much as 15 ft. in breadth. *Victoria County History, Hants*, i, p. 354.

FURTHER EXCAVATIONS AT

walls respectively and filling the foundation-trench of the bastion-wall. This layer clearly represented the original floor-level of the bastion. Below this floor was a stratum of sandy loam, 1 ft. 5 in. thick against the main wall. It was carried down to fill the foundation-trench of the main wall. Its surface ran level for a distance of 7 ft. from the main wall-face, but then dipped sharply as it

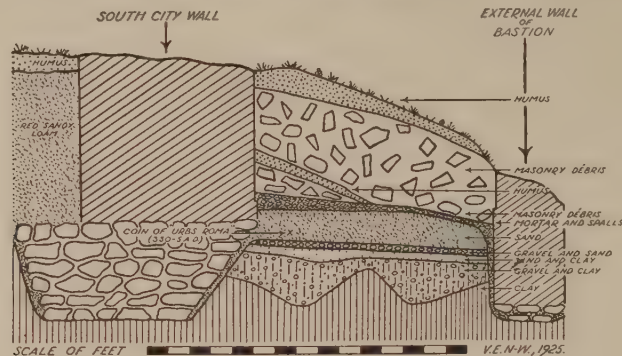


Fig. 8. No. 1 Bastion. Section through filling.

approached the bastion wall, thereby reducing the thickness of the stratum. In this stratum, 1 ft. from its surface and 1 ft. 6 in. from the main wall-face, occurred a coin of 'Urbs Roma' (330-5). While leaving the precise significance of this coin for later discussion (below, p. 275), it will be convenient to point out here that the texture of the sandy stratum in which it occurred was such as to suggest the bare possibility of its having worked its way down to its final resting-place from a higher level. Below this layer of loam were found successive layers, of varying width, of gravel and sand, sand and clay, gravel and clay, and clay simply. All of these were certainly natural and undisturbed, despite the rather curious undulating formation of the lowest. The joints of the face of the main wall inside this bastion in addition to their mortar-filling were pointed with a hard white gypsum plaster. This pointing continued behind the abutting walls of the bastion, and was carried down to within 1-2 ft. of the projecting offset, where it ended abruptly.

No. 2 Bastion lies at an interval of 153 ft. 9 in. from no. 1. It has an interior width across the back of 16 ft. 9 in. and an interior projection of 12 ft. Its walls taken in sequence from west to east measure respectively 8 ft., 5 ft. 6 in., 7 ft. 2 in., 7 ft. 2 in., 7 ft. 6 in., in internal length and have a uniform thickness of 3 ft. 3 in. Here, again, the walls are thickened by a wide internal offset or scarcement carried round to form an irregular semicircular plinth with an average projection, in this case, of 1 ft. 2 in. The bastion was found cleared of its filling down to the original floor-level. A cutting through this floor showed that it was com-

posed as before of earth, spalls, and mortar droppings. These also filled the foundation-trench of the bastion walls. On this floor and adhering to the front wall of the bastion was a heap of mortar left by the builders. Beneath this floor-level was undisturbed loam. The bastion was not bonded into the main wall on either side. The main wall within the bastion bore traces of gypsum-pointing similar to that found in the case of no. 1 bastion.

No. 3 Bastion lies at an interval of 199 ft. 6 in. from no. 2. It has an interior width across the back of 14 ft. 3 in. and a maximum interior projection of 10 ft. 9 in. Its walls taken in sequence from west to east measure respectively 6 ft. 1 in., 5 ft. 10 in., 7 ft. 1 in., 5 ft. 8 in., 6 ft. 4 in., in internal length, and 5 ft. 3 in., 5 ft. 3 in., 5 ft. 3 in., 4 ft. 8 in., 5 ft. 3 in., thick. As usual the walls are thickened basally to form a semicircular plinth, the slight internal projection of which corresponds with the projecting offset of the main wall. At a height of 5 ft. 6 in. above the plinth there is a second offset with a mean width of 10 in. and clearly intended to carry a timber floor. The interior of the bastion was cleared by Ward in 1901. The section obtained by him showed stratification similar to that of no. 1 bastion. A further clearance during the present work revealed in this case, again, a heap of mortar left by the builders adhering to the front of the bastion. Beneath this heap, and therefore sealed, was found a coin of Salonina (254-68). The face of the main wall within the bastion was pointed as usual, and the bastion was not bonded in.

No. 4 Bastion (figs. 9 and 10, pl. LXXXI, fig. 4) lies at an interval of 102 ft. from no. 3. It is the best preserved of all the bastions. It has an interior width across the back of 16 ft. 1 in. and an interior projection of 11 ft. 6 in. at ground-floor level, increasing to 12 ft. 9 in. in its uppermost story. Its walls taken in sequence from west to east measure respectively 6 ft. 7 in., 5 ft. 9 in., 6 ft. 1 in., 6 ft. 1 in., 6 ft. 11 in. in internal length, and have a uniform thickness at ground-floor level of 4 ft. 7 in. The semicircular plinth is here marked by two internal offsets, respectively 7 in. and 3 in. wide, and probably corresponds in depth with the footings of the main wall. There is a second pair of internal offsets, respectively 3 in. and 4 in. wide, at a height of 5 ft. 1 in. above the plinth, and a third single offset, 10 in. wide, 5 ft. 9 in. above the lower middle offset. The bastion walls stand to an average height of 12 ft. Joist-holes at the level of the middle and upper offsets suggest that there were originally floors at these stages; probably also the lowest offset and the projecting offset of the main wall, which correspond, carried a similar floor. This bastion contained an accumulated filling of earth and masonry debris and refuse, but unfortunately had been cleared down to floor level before the present excavations began. In the filling occurred much black, grey, and buff ware, animal bones, and 44 coins ranging from Victorinus (265-8) to Constantius II (337-61). A cutting

made through the undisturbed floor showed it to consist, as in the case of no. 1 bastion, of a layer of spalls and mortar-droppings 6 in. thick. Beneath



Fig. 9. Face of main wall inside No. 4 Bastion showing pointing. Note the putlog holes in the main wall and the abutting bastion-wall (right).

this floor was the natural marl, which, however, at a distance of 5 ft. from the main wall-face shelved downwards towards the footings of the bastion wall. The V-shaped interval thus formed contained a filling of charcoal above the masons' chippings beneath. In the charcoal occurred a coin of Gallienus (254-68). The conformation of the natural marl was suggestive of the lip of an earlier ditch which had been overbuilt by the bastion. But it may equally well have represented merely an unusually wide foundation trench. In any case, the charcoal layer filling the V-shaped interval may reasonably be regarded as

contemporary with the building of the bastion. On the face of the main wall within the bastion was the usual pointing, in excellent state of preserva-

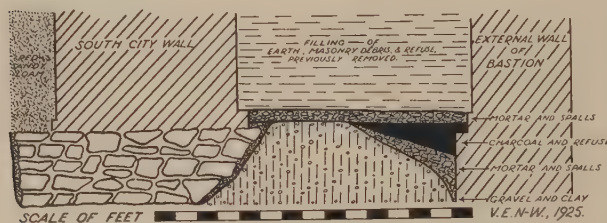


Fig. 10. No. 4 Bastion. Section through filling.

tion. As before, this was carried behind the abutting walls of the bastion. These are not bonded, but roughly toothed into the main wall. A feature of this bastion is its quoins of freestone, which stone is also freely sprinkled hereabouts over the face of the main wall.¹

No. 5 Bastion lies to the east of the South Gate at an interval of 460 ft. 9 in. from no. 4. It has an interior width of 12 ft. 9 in. and a maximum interior projection of 12 ft. 6 in. Its walls from west to east measure respectively 7 ft., 6 ft. 3 in., 5 ft. 2 in., 5 ft. 7 in., 8 ft. in internal length, and 4 ft., 4 ft., 4 ft. 9 in., 4 ft. 3 in., 4 ft. thick. The semicircular footing-plinth varies from 6 in. to 1 ft. 7 in. in internal projection, and corresponds with the projecting footing-course of the main wall. As found, this bastion was ruined to floor-level, and beyond the usual filling of refuse contained no evidence of historical significance. It was not bonded into the main wall.

No. 6 Bastion lies at an interval of 164 ft. 9 in. from no. 5. It is ruined down to the plinth, which is, as usual, continuous and semicircular. The bastion has

¹ See above, p. 252, note 1.

an interior width of 13 ft. and an interior projection of 10 ft. 9 in. From west to east the walls were probably 4 ft., 3 ft., 3 ft., 3 ft., 3 ft. 9 in. thick. Lying on the natural soil within the bastion immediately below the original floor-level, which has gone, was found a coin of Tetricus I (268-73); the stratification of this coin, however, was doubtful. As usual the bastion is not bonded into the main wall.

The evidence from the bastions may now be summarized:

Intervals between Bastions

				ft. in.					ft. in.
No. 1 Break ¹	-	No. 1 Bastion	=	151 6	No. 4 Bastion	-	No. 5 Bastion	=	460 9
" 1 Bastion	-	" 2	"	= 153 9	" 5	"	- " 6	"	= 164 9
" 2	"	- " 3	"	= 199 6	" 6	"	- S.E. corner (approx.)	=	141 9
" 3	"	- " 4	"	= 102 0					

Dimensions of Bastions

No.	Interior		Interior length of Walls W. to E.						Thickness of Walls W. to E.				
	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
1.	14 1	11 3	6 8	5 4	5 5	5 4	8 4	3 0	3 2	3 2	3 2	3 2	3 2
2.	16 9	12 0	8 0	5 6	7 2	7 2	7 6	3 3	3 3	3 3	3 3	3 3	3 3
3.	14 3	10 9	6 1	5 10	7 1	5 8	6 4	5 3	5 3	5 3	4 8	5 3	5 3
4.	16 1	11 6	6 7	5 9	6 1	6 1	6 11	4 7	4 7	4 7	4 7	4 7	4 7
5.	12 9	12 6	7 0	6 3	5 2	5 7	8 0	4 0	4 0	4 9	4 3	4 0	4 0
6.	13 0	10 9	8 0	4 6	4 9	4 3	8 6	4 0	3 0	3 0	3 0	3 9	3 9

The faced masonry of the bastions is in every case carried down below the bottom of the face of the main wall, making their footing-level strictly so-called correspondingly deeper than the footing-level of the main wall.² The bastions are to all intents and purposes identical in character. Ground-floor levels may be distinguished in all of them and additional higher floor-levels in two of them (nos. 3 and 4), showing that they were all originally divided into stories. No. 4 bastion shows traces of three floor-levels, and this perhaps represents the original number. No. 1 bastion has the sill of a postern-door in its east wall—a feature peculiar to this bastion. As found, all the bastions, and notably no. 4, contained a mixed filling of masonry debris and refuse. The stratification of this filling showed it to be the result partly of destruction, partly of deliberate tipping. The face of the main wall within the bastions bears traces of a pointing of fine white gypsum plaster, which in every case continues behind the abutting bastion-walls. Of the character of the superstructures of the bastions no evidence

¹ i.e. taking No. 1 Break to be approximately the centre of the south-west corner.

² But see below, p. 273, note 2.

was forthcoming. The absence from their filling, however, of fallen roofing-tiles or slabs or other distinctive masonry would suggest that they were not roofed in the strict sense of the word, but simply covered probably with timber platforms level with the rampart-walk along the wall.¹

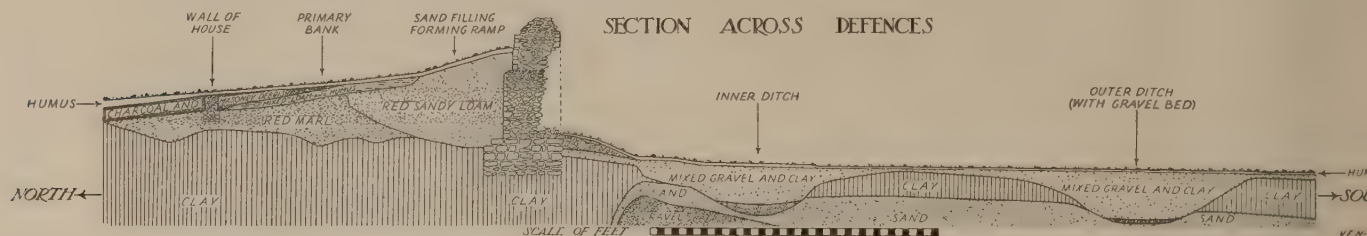


Fig. 11. Caerwent. Section across southern defences.

THE EARTHEN BANK

To test the existence of an earthen rampart earlier than the wall, two cuttings were made at right angles to the inner wall-face, one 540 ft. from the south-western corner, the other 125 ft. from the south-eastern. In the first of these cuttings the stratification though generally indeterminate was consistent with the existence of an earlier bank. The forward slope could plainly be made out as a line of demarcation between, on the one hand, soil of a marly texture below, presumably the material of the original bank, and, on the other hand, a clean sandy loam above, filling the interval up to the wall and forming in fact a ramp. The slope shelved downwards almost vertically from a point some 2 or 3 ft. above the original ground level, suggesting that the bank had been cut back here at the time of the building of the wall.

In the second cutting the stratification was plain (fig. 11). Here the crest of the bank lay 22 ft. back from the interior face of the wall. The bank was composed of marl and rose to a height of 6 ft. above the natural clay. The forward slope was fairly sharp, falling almost vertical for the first 2 ft. and then more gently till it met the ground 11 ft. behind the wall-face. Probably here also it had been partly cut away at the time of the building of the wall. The backward slope was more even, and met the original ground level some 33 ft. behind the

¹ Bastions were attached to the walls of other Romano-British towns (as distinct from forts), e.g. London, Caistor-by-Norwich, and Cirencester (?). 'Leland, who visited Cirencester in the day of Henry VIII, mentions . . . "a fundation of towers" as "sometyme standing on the waul", along the east front. These "towers" were presumably projecting bastions, such as were common on Roman town-walls in the later Empire. None are now visible, but the bases of one or two, near the Work-house, on the west side of the town were . . . destroyed within living memory.' *Archaeologia*, lxi, pp. 166 f.

crest.¹ The interval between the bank and the wall was filled as before with a clean sandy loam which, seen in section, continued the line of the original bank to within 13 ft. of the wall, where it jumped sharply about a foot to form a sort of terreplein, which met the wall at a height of 12-13 ft. above its footings. The sand of the ramp was remarkably clean. The numerous pits sunk into it along the whole length of the wall produced only a small quantity of Samian and coarse wares and a single illegible 'second brass', possibly of Domitian (see below, p. 276). The provenance of the material of the ramp is somewhat problematical. Its extreme cleanness would suggest that it was obtained from some spot outside the area of intensive occupation. In making the cutting just described a wall was discovered 39 ft. from the interior face of the main wall. It was 2 ft. thick, well built, and with footings carried down to a depth of 18 in. into the clay of the original bank. It was followed for 19 ft. and 13 ft. respectively west and east of the cutting, or over a total length of 38 ft. Over this length no returns were found. It was presumably the wall of a house, and lay north-east and south-west, that is, oblique to the line of the town wall. As found, though preserved to a height of nearly 2 ft., it was completely covered by a destruction layer of charcoal and masonry debris. In this layer occurred three coins of Constantine I (307-37) and one of Gratian (367-83).

THE DITCHES

As has already been said, the existence of a ditch-system external to the wall was proved by a cutting made at right angles to the outer wall-face 52 ft. from the south-east corner. This revealed the sections of two ditches. The inner ditch was approximately 28 ft. wide and had a maximum depth of 7 ft. 6 in. Between the ditch and the wall was a flattish berm of 10 ft. Rather less than half way down the scarp was a secondary berm 7 ft. wide; it might well have carried sharpened stakes or chevaux-de-frise, though no traces of such were found. The counterscarp was continuous and fairly steep. In the silt and debris in the bed of the ditch were found seven coins ranging from Crispus (317-26) to Theodosius (379-95). The sides of the ditch appeared to have been puddled with clay. Between the inner and the outer ditch was an interval of approximately 27 ft. The outer ditch was of roughly the same dimensions as the inner, being 30 ft. wide and 7-8 ft. deep. Both its scarp and counter-

¹ Ward (*Arch. Camb.*, 1916, p. 16) states with reference to the bank inside the north wall of the town that 'the summit of the long stretch of mound [= bank] exposed behind the north wall exhibited the curious feature of two irregular lines of longitudinal indents, roughly semicircular in section, and of varying widths. They had all the appearance of being the impressions of tree-trunks, and it is not unlikely that these supported a timber breastwork or stockade.' No similar evidence was noted during the present work.

scarp, however, were continuous, the former in this case having no secondary berm. The bed of the ditch was marked by a layer of pebbles, suggesting the action of running water. As the drawn section (fig. 11) shows, the beds of both ditches were cut into a stratum of sand.

CONCLUSIONS

The conclusions emerging from the accumulated evidence fall naturally under two headings—(a) method of construction, (b) date.

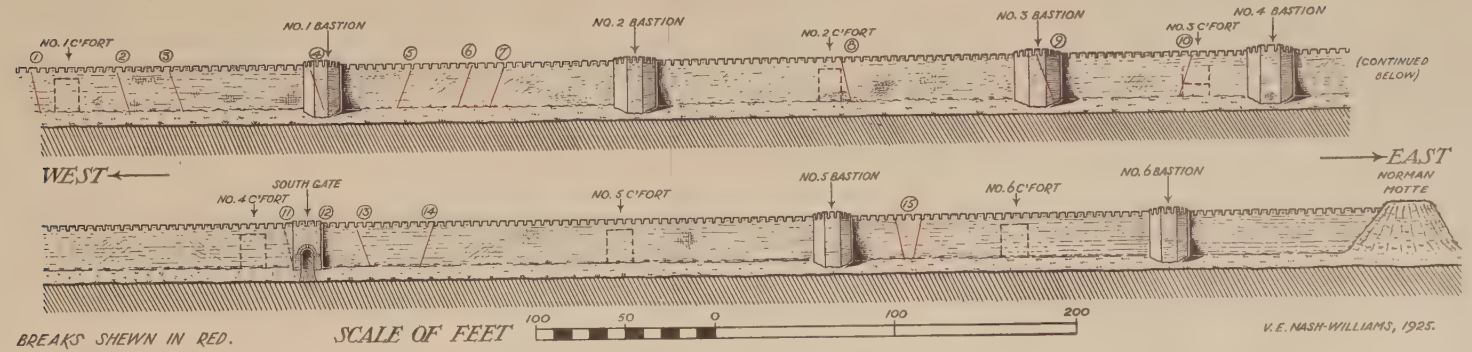
(a) *Method of Construction* (pl. LXXXIII). The south wall of Caerwent (in common presumably with all the other walls) was built to supersede an original earthen bank. This bank was of marl, 34 ft. in maximum width and 6 ft. or more in height, with crest 21–2 ft. behind the line of the later interior wall-face. Two sections across the bank at widely separate points suggested that its forward slope had been partially cut away at the time of the building of the wall—presumably for the convenience of the builders.

The first step in the construction of the wall was the cutting of the foundation-trench. This was of U- or truncated V-shaped profile, 3–6 ft. in depth and varying from 10 ft. 6 in. to 12 ft. 6 in. in width. The trench was probably aligned, and certainly cut, in more than one length. The convexity in plan of the main wall, with salient at no. 3 counterfort, would seem to establish the latter as a point of reference in the setting out of the line of the trench. It will be noticed further that this point exactly coincides with the nearest approach to the wall of the buildings within the town. The inference is clear. The foundation-trench was aligned in relation to existing buildings along the southern edge of the town. That it was cut in a number of lengths is proved by interruptions in its line—(1) between nos. 4 and 7 breaks, (2) the South Gate, (3) between nos. 13 and 14 breaks, (4) no. 15 break. The purpose of these interruptions will emerge shortly. The wall itself was raised in the manner already described (p. 252 above).

Certain of the principles observed in the construction of the wall itself are clear, though their explanation is not always so obvious. In the first place, the wall was built with exterior face throughout flush or nearly flush with the footings, but leaving the footings with a mean internal projection of 1 ft. 9 in. The reason for this is obscure.

The wall, again, as distinct from its footings, was constructed in a series of fourteen conjoined lengths, excluding the South Gate, which has already been shown to be a separate structure. The work of building, therefore, was presumably apportioned among a number of gangs working more or less simultaneously. On what principle the work was allotted is not apparent. So, too, except in the case of three sections of the wall, is the order of construction.

CAERWENT: SOUTH WALL. SCHEMATIC RESTORATION TO ILLUSTRATE METHOD OF CONSTRUCTION.



The exceptions, defining them by their delimiting breaks, are (1) lengths 4-7, (2) length 13-14, (3) no. 15 break. All of these significantly coincide with marked roughnesses on the interior face of the wall—roughnesses consistent with the view that here the wall was not built free. In the case of each of the two latter gaps the masonry-filling was carried definitely across a road-surface. And further investigation might well show the same to have been the case with the other. The conclusion seems inevitable, therefore, that the three sections of the wall in question were deliberately left till the last, so that the gaps might be utilized as roadways through the wall during the actual building;¹ that then they were blocked, against an earthen ramp already constructed or in process of construction behind them.

But the wall generally, except in the case of the three sections noted, was built free throughout its length. This is proved by the character of the masonry² of its internal and external faces and by the presence in both of rows of putlog holes (pl. LXXXI, fig. 1).

It has already been shown that the breaks in the wall were left plainly visible on the internal face, but in the case of the external face they were carefully disguised, so that here, except on close observation, they are quite indistinguishable. But in point of fact, on the internal face, too, the breaks must ultimately have been indistinguishable, being covered by the earthen ramp.

The South Gate has already been described. Its location well to the east of the centre of the line of the wall is noteworthy but easily explained. As reference to the general plan of the town clearly shows, its position was dictated by pre-existing house and street lines, which fact, incidentally, further strengthens the conclusions that the building-*line* within the wall antedates the wall.³

Despite their apparent diversity of construction, it is certain that all the counterforts were planned and built as an original and integral part of the main wall. This is proved by a conjunction of the evidences. In the first place, all the counterforts with the exception of no. 6 are bonded into the main wall on one or both of their sides. In the second place, in the case of no. 3 counterfort, which was never finished by the builders, the wall face above is left with alternate courses of projecting bonds obviously intended to receive the rest of the counterfort. In the third place, the dimensions of all the counterforts are approximately the same. Finally, the intervals between counterforts are, with

¹ In this connexion the even distribution of the gaps along the line of the wall may be noted.

² For this, see above, p. 252.

³ The buildings themselves do not necessarily antedate the wall, since buildings erected after the construction of the wall would naturally conform with its line. The only test of the relative date of a particular building must be whether it overlies the earthen ramp backing the wall or not.

one exception, approximately equal (180-90 ft. mean).¹ The exception is that between nos. 1 and 2 counterforts, which interval, it may be noted, is almost exactly double the others. It would appear that here, therefore, a counterfort was omitted. And as reference to the plan (pl. LXXX) will show, the omission significantly coincides with one (lengths 4-7) of the three sections of the wall already shown (p. 271 above) to have been constructed *after* the raising of the ramp.

The construction and distribution of the counterforts suggests that these, as secondary features of the defences, were left for completion at leisure after the construction of the main wall, but that for some reason one was altogether omitted, and another (no. 3) never completed. In this connexion, it is curious that, as noted above, behind two of the counterforts (nos. 3 and 5) the clean sandy loam of the ramp was found interrupted by a V-shaped filling of refuse, as though gaps had been left in the ramp for the construction of the counterforts and afterwards been filled up with material obtained from near at hand within the town. If so, however, the filling must have been carried out at a considerably later date, for, as will be shown below (p. 277), while the pottery deriving from the ramp does not extend beyond the second century, that from behind no. 5 counterfort at least consists mainly of fourth-century types. On the other hand, it is not entirely impossible that the refuse-pits were in every case strictly refuse-pits, that is, dug definitely into the material of a previously completed ramp.

The precise character and purpose of the counterforts is uncertain. The problem was discussed by Ward, who suggested four possible solutions: (1) that the counterforts were buttresses, (2) that they formed the bases of mural turrets, (3) that they were carried up as platforms for missile-throwing machines,² (4) that their superstructures were equipped with flights of steps leading up from the summit of the earthen ramp to the parapet-walk along the wall. Ward rightly argued for (4) as the most feasible. The counterforts can never have been intended for buttresses; their construction is much too flimsy, and their mean projection in almost every case is too small. And the same arguments make against (2) and (3). As to (4), in the case of none of the counterforts does any trace of a flight of steps still remain, but as all the counterforts are to-day destroyed at least down to the level of the top of the earthen ramp, the level, that is, at which the flights of steps presumably began, the negative argument is not decisive.

¹ Evidence has already been cited (above, p. 262, note 1) suggesting that the interval between counterforts on the Caerwent north wall also was 190 ft. Cf. the 200 ft. interval between counterforts in the case of the Silchester town wall.

² Rectangular internal bastions (so called) which may have served such a purpose were attached to the Colchester walls. See *J. R. S.*, ix, 1919, p. 141.

The earthen ramp backing the wall was raised actually after the building of the wall but definitely as part of the same scheme. This is proved by the fact that while generally the internal face of the wall with its dressed masonry and putlog holes antedates the ramp, the masonry-filling of the temporary gaps in the wall, on the other hand, was certainly not built free, but, as shown, against a ramp already raised.

The purpose of the six hollow bastions is not wholly clear. There is evidence that they were all originally divided into stories, while the ground-floor of one of them (no. 1) was entered from without by a postern-door. At the same time, the bastions could not have been occupied in the ordinary sense of the word. In the first place, the stories, where preserved, give no head-room. In the second place, they are not lighted. Finally, no occupation-levels were found in any of them.¹ On the whole, the safest conjecture would seem to be that the interiors of the bastions were used as store-rooms, being in each case entered by some such occasional means of access as a ladder, or by a flight of wooden steps.

But the crucial problem raised by the bastions is their relationship to the wall. Were the bastions, like the counterforts, planned and built as an original and integral part of the wall, or do they represent subsequent additions? Ward argued for the latter view, on the grounds (1) that the bastions are straight-jointed with the wall, (2) that their footings run deeper than those of the wall, (3) that the general character of their masonry is different from that of the wall. (2) and (3) are perhaps not strictly accurate,² and, in any case, of doubtful cogency, but (1) is decisive. The straight joints of the wall and the bastions prove that in point of strict structural sequence the bastions are later than the wall. Furthermore, it is now known that the plaster with which the face of the wall was pointed, continues behind the abutting walls of the bastions.

On what principle the bastions were spaced along the wall the irregularity in their distribution (*see* p. 267, above) makes it impossible to say. Tactical considerations, however, would appear to have decided the location of one, no. 4. It stands immediately to the east of the salient of the wall (pl. LXXX), where it could cover the whole of the wall up to the South Gate, a length dead to no. 3. It seems possible, too, that the projecting South Gate itself was intended to serve the purposes of a bastion (*cf.* pl. LXXXIII). In which case, a partial explanation is supplied of the abnormal interval (460 ft. 9 in.) between nos. 4 and 5 bastions. On the other hand, it is equally possible that the demolition of

¹ Ward (*Arch. Camb.*, 1916, p. 29) states that the bastions 'were floored with concrete on the surface of the natural ground within'. He is mistaking for concrete the layer of spalls and mortar-droppings left by the builders.

² Ward's investigation of (2) was not exhaustive. The point could not be generally elucidated during the present work, but in one case (no. 1 bastion) where it was fully investigated bastion and wall footings were found to correspond (fig. 8). As to (3) the difference is very slight.

the front of the gate, together with the insertion of the blocking flush with the face of the main wall, formed a part of the reorganization represented by the addition of the bastions.

(b) *Date.* The evidence for the date of the southern defences of Caerwent may be considered under four separate headings: (1) primary earthen bank, (2) bastions, (3) main wall, (4) ditches. The order is illogical, but convenient.

(1) The primary earthen bank certainly represents the original defences of the town. Sections through it showed that it had been thrown up on the undisturbed natural clay, with no intervening layer to indicate an antecedent occupation. The bank must therefore belong to the earliest occupation of the site. The datable evidence derived from the two sections cut is listed below. It consisted of a number of pottery fragments of Samian and coarse buff and grey wares found either actually in the bank or on the natural clay immediately behind it. An analysis of the Samian fragments (pp. 280ff., below) shows (*a*) one fragment of a small 27 of good thin ware, (*b*) three fragments of 37's of early type (one transitional?), and (*c*) three indeterminate fragments of typically South Gaulish ware. None of these sherds need be later than the end of the reign of Vespasian. The coarse wares represented (p. 283, below) are not closely datable. They include (*a*) two ollae of wide girth as compared with rim, (*b*) a carinated bowl with flat grooved rim, a common late first-century type, (*c*) one early mortarium with beading lower than the flanged rim, (*d*) an imitation form 30 of fine grey ware, and (*e*) a rouletted bowl of pink ware imitating forms 33 and 46. All of these types occur on late first-century sites, though some seem to continue as late as the middle of the second century. Overmuch weight must not, of course, be placed on a mere handful of sherds, but their evidence, such as it is, suggests that the bank was raised sometime during the period 75-100. And this dating is supported by the coin- and pottery-evidence derived from the town generally. These, in fact, incline rather towards the earlier limit, favouring any year between *c.* 75 and 80 as the probable date of the first founding of the town.¹ And with the founding of the town must be associated the original earthen defences, with reference to which the town-plan was clearly laid out from the first.

(2) Evidence for the date of the building of the bastions was derived from the floor-levels of all the bastions available for exploration. It included both coins and pottery.² The pottery sherds consisted exclusively of coarse wares

¹ Except for the coins and potters' stamps this has not been published. For the coins see the *Bulletin of the Board of Celtic Studies*, ii, pp. 92 ff., and iv, pp. 99 ff.; for the potters' stamps *ibid.*, v, pp. 166 ff.

² Quantities of animal bones also occurred in and below the floors of all the newly explored bastions.

and imitation Samian, but were in every case so fragmentary as to be practically valueless for dating purposes. The coin-evidence, on the other hand, is of the utmost importance. In no. 6 bastion a coin of Tetricus I (268-73), of doubtful stratification, was found below floor-level. In no. 4 bastion a coin of Gallienus (254-68) was found in the filling of the foundation trench. In no. 3 bastion a coin of Salonina (254-68) was found sealed beneath a heap of mortar left by the builders. Finally in no. 1 bastion a coin of Urbs Roma (330-5) was found well below floor-level. The significance of these coins is obvious. Three of them give *c.* 270 as the higher limit for the building of the bastions; the fourth advances the date to *c.* 330. The evidence of this last coin, only distantly supported though it is by that of others, must be accepted. It occurred definitely below the layer of spalls and mortar-droppings left by the builders of the bastion, and its stratification was certain. The bastion, therefore, must be dated post *c.* 330. Furthermore, as the coin of Urbs Roma was in good condition when dropped, the building can scarcely have taken place more than a decade or so after that date. The erection of this and the other bastions may thus reasonably be assigned to the period 330-40. This dating is consistent with the conventional view that polygonal bastions are rarely earlier than Diocletian.

The accumulated material found in the interiors of the preserved bastions raises the question of the date of their first destruction. One of them was partially cleared by Ward, who found that the filling consisted of mixed masonry debris, human and animal bones, and refuse, the result partly of deliberate tipping, partly of destruction. And, as has already been shown, similar results were obtained in the case of nos. 1 and 4 bastions, cleared during the present work. The filling of no. 4 bastion was productive of an abundance of datable evidence. This included 41 coins covering the period Gallienus-Constantius II (254-361), a late second-century bow-fibula (fig. 12), a third-century enamelled disc fibula, and a series of coarse pottery fragments of characteristically late types. Fourth-century sherds were also forthcoming from the filling of nos. 2 and 3 bastions. Altogether this pottery group included (*a*) late ollae, all with rim markedly overriding the body, (*b*) flanged mortaria closely approximating to the 'hammer-head' variety, (*c*) red-coated flanged bowls, besides vessels of less datable types. There was a notable absence of Samian ware. As some of this evidence may have reached the bastions in comparatively recent times, it should not perhaps be interpreted too rigidly. But at any rate its general consistency is ground for referring the first destruction of the bastions to some time not earlier than the end of the fourth century.

(3) Upper and lower limits for the building of the main wall have already been established in the dates of the bank and the bastions. The wall cannot have

been built before *c.* 75, the earliest date for the raising of the bank, or after *c.* 340, the date of the construction of the bastions. Can its date be fixed more precisely? Unfortunately only two or—including the pottery found in the refuse pits or pockets behind the counterforts—three pieces of evidence bearing directly on the problem were recovered, and one of them doubtful.

The first was the coin of Urbs Roma already discussed in connexion with no. 1 bastion. As there shown, this coin was found definitely below the floor-level of the bastion. Equally, however, it occurred in a stratum *which continued underneath the footing-level of the main wall*, therefore antedating the wall. A possible conclusion would be that the wall must be of date later than the coin found in the stratum, that is, later than *c.* 330. But the case is complicated by the fact that the stratum in which the coin occurred was of pure sand and capable, therefore, of containing intruded evidence. The coin of Urbs Roma, being outside the line of the wall, may have been dropped on the surface of the sand *after the building of the wall*, and worked its way down to the level where found. Whether this was the case or not there was nothing to show, but the mere possibility necessarily destroys its evidential value as far as the problem of the date of the wall is concerned.

The second piece of evidence for the date of the wall is the series of pottery fragments and other objects derived from the earthen ramp backing the wall. This ramp, as has been shown, was raised during the construction of the wall. Its contents may, therefore, be treated as generally antedating the wall. They included an illegible 'second brass', possibly of Domitian, two fibulae of second-century date, a number of sherds of Samian and coarse wares, and a broken column capital. The Samian (p. 281, below) comprised (a) ninety-four fragments of plain forms ranging in date from the Flavian to the Antonine period, (b) twenty-six decorated fragments of similar range, and (c) two stamps, one of the potter Escusus (Trajan-Hadrian?), the other illegible, but probably of Hadrian-Antonine date. The Samian fragments are thus all comparatively early; none is necessarily later than the Antonine period. Among the coarse wares (p. 284, below) were (a) ollae of first- and second-century types (i.e. none with rim overriding body), (b) steep-sided dishes of grey ware of indefinite chronological range, (c) straight-sided bowls with flat everted rim (so-called 'porringer' shape), (d) various vessels, including an early second-century mortarium and an early ring-necked flagon. All of these types, as the detailed list shows, probably fall well within the period *c.* 75–200. Nothing, therefore, was obtained from the ramp of later date than the second century. The conclusion so far, therefore, is that the wall could not have been built before the late second century.

Finally, there is the pottery from the refuse-pits behind nos. 3 and 5 counter-

forts. The significance of these pits remains obscure. Either they were refuse-pits strictly so-called, or else they represented intervals left in the ramp at the time of its raising and filled up later (see p. 272, above). In either case, however, their filling and presumably therefore to some extent their contents, would post-date the ramp and with it the wall. From the first pit (behind no. 3 counterfort) came only two Samian stamps (p. 283, below), one apparently of the Hadrian-Antonine potter Cintusmus, the other illegible, but perhaps of Trajan-Hadrian date. The second pit (behind no. 5 counterfort) was more prolific. In addition to a further two Samian stamps, this time of the Flavian and Hadrian-Antonine potters Calvus and Paullus respectively, it produced a small but interesting series of coarse wares (p. 286, below). Of the five vessels represented among these, three are of well-defined fourth-century types. The filling of this pit, therefore, must be dated at the earliest in the fourth century. The evidence from the refuse-pits thus simply fixes the fourth century as the latest date for the building of the wall—a limit already independently established by the dating of the bastions.

The date of the construction of the main wall thus remains obscure. The most that can be said on the evidence is that the wall was built not earlier than the late second century nor later than *c.* 340.¹

(4) Until the ditches outside the main wall have been fully explored their date and precise relationship to the wall must remain uncertain. Were both ditches constructed with the wall as integral parts of the same defensive system, or is one or the other (or perhaps both) to be related to the primary earthen bank? The scope of the present work did not permit of the investigation of these problems. From the one ditch-section cut the only evidence recovered was the seven coins, already mentioned, ranging from Crispus (317–26) to Theodosius (379–95). All of these came from the silted-up bed of the inner ditch. It would appear, therefore, that this inner ditch (and presumably the outer as well) was at all events open in the late fourth–early fifth century.

¹ The date of the blocking of the South (and of the North) Gate in default of evidence must remain obscure. Reasons have already been adduced for assigning it to the final phase of the town's history (p. 259, note 1, above). Dr. Ashby in a foot-note to his report on the excavation of the South Gate in 1904 (*Archaeologia*, lx, p. 112, note) states: 'From the evidence of coins it [i.e. the blocking] must be attributed, at earliest, to the time of Valentinian I, one of whose coins was found 4 ft. below grass level, 12 ft. north of the east pier of the gate. A coin of Helena was also found here, and one of Constantine the Great, 7 ft. below grass level, 5 ft. north of the west pier; and on the road level, 15 ft. north of this pier, a coin with the legend *URBS ROMA*.' But the evidence, so stated, scarcely appears conclusive. It is perhaps more to the point that the blocking of the North Gate, which presumably is contemporary with that of the South Gate, includes much re-used material.

OBJECTS FOUND

I. COINS

I am much indebted to Mr. Harold Mattingly, of the British Museum, and Mr. W. F. Grimes, of the National Museum of Wales, for help with the preparation of the coin-lists, of which the following is a summary.

<i>Emperor</i>	<i>Date</i>	<i>AR.</i>	<i>1 AE.</i>	<i>2 AE.</i>	<i>3 AE.</i>	<i>Total</i>
	A. D.					
Claudius	41-54	—	—	1	—	1
Flavian	69-96	—	—	1	—	1
Faustina II	d. 175	—	1	—	—	1
Gallienus	254-68	—	—	—	7	7
Salonina	254-68	—	—	—	1	1
Victorinus	265-8	—	—	—	3	3
Tetricus I	268-73	—	—	—	9	9
" II	268-73	—	—	—	4	4
Claudius II, Gothicus	269-70	1	—	—	6	7
Carausius	287-93	—	—	1	2	3
Allectus	293-6	—	—	—	1	1
Helena	d. 328	—	—	—	1	1
Licinius II	317-13	—	—	—	1	1
Constantine I (as Aug.)	307-37	—	—	—	12	12
Urbs Roma	330-5	—	—	—	1	1
Constantinopolis	330-5	—	—	—	1	1
Constans	333-50	—	—	1	4	5
Constantius II (as Caes.)	323-37	—	—	—	2	2
" " (as Aug.)	337-61	—	—	—	2	2
Julian	358-62	—	—	—	1	1
Gratian	367-83	—	—	—	1	1
Theodosius I	379-95	—	—	—	1	1
Arcadius	394-408	—	—	—	1	1
Honorius	395-423	—	—	—	1	1
<i>Imitations (radiate)</i>	c. 300-400	—	—	—	1	1
<i>Theodosian types</i>	c. 330-450	—	—	—	3	3
<i>Unidentifiable</i>	—	—	—	—	3	3
Total	41-c. 450	1	1	4	69	75

2. OBJECTS OF BRONZE, BONE, HORN, OR GLASS

1. Bronze bow fibula from reddish sandy loam of ramp. Spiral spring and pin wanting. The cross-bar is ornamented with four grooves on either side. The head of the bow, which is flat beneath, has a strong central ridge, perforated to receive the chord of the spring, set between double converging ridges. The outer ridges are cut away towards the summit of the bow to form wings; the inner ridges die away into the foot, which is plain and not marked off. The catch-plate is perforated and triangular, with the base curving away into the bow. Total length: 38 mm. Cross-bar: 23 mm. Cf. Curle, *Newstead*, Pl. LXXXV, 4, dated 150-200; but an almost identical brooch was found in 1927 at the Caerleon amphitheatre in a deposit dated c. 80.

2. Bronze bow fibula with traces of gold plating, from reddish sandy loam of ramp. The hollow cross-bar is flattened on its upper face and tapers slightly at both ends. The head of the bow, which is hollow beneath, continues forward into a solid loop, and is ornamented with two side-grooves continuing down the foot, from which the head

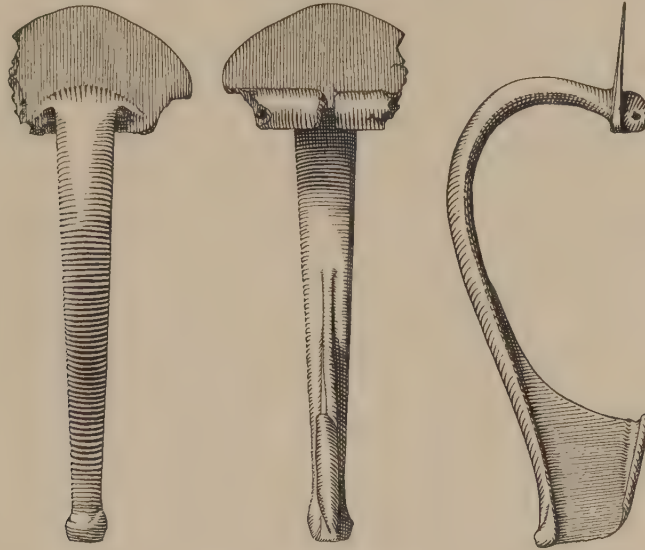


Fig. 12. Fibula found in the filling in no. 4 Bastion. (1)

is marked off by a raised boss originally inlaid with enamel. The foot has a strong central ridge between the defining side-grooves, and ends in a disc of the metal inlaid with white (?) enamel. Hinged pin of bronze. The catch-plate is solid and in shape a truncated triangle with the base curving away into the bow. Total length: 49 mm. (approx.). Cross-bar: 20 mm. Cf. Curle, *Newstead*, Pl. LXXVI, 22 (Antonine); *Wroxeter Report*, 1914, p. 24, no. 10. Probably second century.

3. Bronze disc fibula found 9 ft. down in the filling of no. 4 bastion; ornamented with three raised rings of the metal defining three concentric zones inlaid with enamel as follows: centre uncertain, middle red, outer blue. Below, a spiral spring of three coils (partly wanting), riveted between two circular plates of bronze, and a catch-plate. Fibulae of this type are dated (*B.M. Guide to R.B.*, p. 61) in the third and fourth centuries, which agrees with the associations in the present example. On the other hand, these disc fibulae occur commonly enough in the second century. See *Wroxeter Report*, 1914, p. 25, no. 11.

4. Bronze bow fibula (fig. 12). Hinged pin wanting. The cross-bar is flattened to form a plain semicircular head-plate. The bow is plain, flat beneath, and terminates in an expanded foot. The catch-plate is solid and in shape a truncated triangle with the base curving away into the bow. Total length: 80 mm. Head-plate: 27 mm. Found 9 ft. down in the filling of no. 4 bastion. Dr. Cyril Fox dates this brooch in the late second century. He writes: 'Segontium has yielded a knee brooch "with head

flattened out to form an oval plate" (see *Y Cymmrodor*, xxxiii, fig. 58, 1). Wheeler (*ibid.*) notes this type as of second-century (Antonine) date, surviving into the third century. From the same site comes a large bronze brooch, also dated in the late second-early third century, the head of which is flattened to form a large circular plate with loop (*ibid.*, fig. 58, 3). This is a slightly different treatment of a similar decorative and partly functional motive. These are close parallels to the peculiar feature presented by our brooch, and since this feature is certainly very rare, it is significant that all examples of it come from Wales. I can find no case of its occurrence elsewhere. Brooches with semicircular head-plate reappear in this country in the fifth century. An excellent example from a barrow at Swaffham, Cambs., is in the Museum of Archaeology and Ethnology, Cambridge. I do not think that any connexion can be made out between the Caerwent brooch of the second century and the Saxon brooch of the fifth. The latter is of Gothic form and probably eastern origin, closely connected with radiate-head types, which derive ultimately from Sarmatia in the fourth-fifth centuries (cf. Baldwin Brown, *The Arts in Early England*, iv, pl. cXLIV). Two analogous brooches from the Roman site at Charterhouse-on-Mendip are included in the Capper-Pass collection in the Bristol Museum.

5. Scale from a breastplate of the type known as *lorica squamata* (for a description of which see Curle, *Newstead*, pp. 158 ff.). The scale is of thin beaten bronze, squared at the upper end and rounded at the lower, with twin perforations in the top, the bottom, and one side, to receive ties for attaching the scale to the adjacent overlapping scales. One of the ties, of flattened bronze wire, remains. Found in the filling of no. 5 bastion.

6. Bone pins from the filling of no. 4 bastion and one from the reddish sandy loam of ramp.

7. Whistle of staghorn. Found on the surface. Cf. *O.R.L.* 33, Stockstadt, pl. vii, 59.

8. Plain glass bead of common type, from reddish sandy loam of ramp.

3. SAMIAN WARE

Reference is made to the following works :

- | | |
|-------------------|--|
| Déchelette, | <i>Les vases céramiques ornés de la Gaule romaine</i> , 1904, vol. ii. = D. |
| Fölzer, | <i>Ostgallische Sigillata-Manufakturen</i> , 1913. |
| Knorr, | <i>Töpfer und Fabriken verzierter Terra-Sigillata des ersten Jahrhunderts</i> , 1919. |
| Ludowici, | II. <i>Stempelbilder römischer Töpfer aus meinen Ausgrabungen in Rheinzabern</i> , 1901-5. |
| " | III. <i>Urnengräber römischer Töpfer in Rheinzabern</i> , 1905-8. |
| Oswald and Pryce, | <i>Terra Sigillata</i> , 1920. |
| Walters, | <i>Catalogue of Roman Pottery in the Department of Antiquities in the British Museum</i> , 1908. |

Plain Forms.

S 1, on natural clay behind primary bank. S 2-95, in reddish sandy loam of ramp.

S 1. Drag. 27 (small). Good (thin) ware and glaze. Period: Flavian. Found on

natural clay behind primary bank, with which it is probably contemporary (pl. LXXXIV, fig. 1).

S 2-95. This group represents the plain Samian sherds found in the reddish sandy loam of the ramp along the line of the main wall. The following is an analysis of the group :

<i>Form</i>	<i>No. of Fragments</i>	<i>Period</i>	<i>Remarks</i>
Ritt. 1 (?)	1	Flavian	
Drag. 18	3	{ Flavian (2) Trajan (1)	
" 18/31	20	{ Trajan (5) Trajan-Hadrian (3) Hadrian (10) Hadrian-Antonine (2)	
" 31	7	Hadrian	Including one illegible stamp.
" 27	5	Domitian-Trajan	
" 33	9	Trajan-Hadrian	Including stamp ESCVSI M (see below).
" 35	5	{ Flavian (2) Trajan (3)	
" 38	2	Trajan-Hadrian	
Déch. 72 (?)	1	Flavian	
?	41	{ Flavian (3) Domitian-Trajan (3) Trajan (12) Trajan-Hadrian (17) Hadrian (6)	

Decorated Forms.

S 96-100, in marl of primary bank. S 101, on natural clay behind primary bank. S 102, in exterior footings of main wall near W. corner. S 103-28, in reddish sandy loam of ramp.

Pl. LXXXIV, fig. 1.

S 96-101. All these sherds with the exception of S 101 occurred in the marl of the primary mound. S 101 was found on the natural clay and may be regarded as contemporary with it.

S 96. Drag. 37. Good ware and glaze. Panel decoration : (i) boar to l. (cf. D. 834) ; (ii) mostly wanting. *Period* : Flavian.

S 97. Drag. 37 (transitional?). Good (thin) ware and glaze. Above : band of straight wreath (Walters, pl. xxxiv, 23). Upper (?) frieze panelled : (i) part of cruciform pattern (cf. Walters, pl. xi, 6). *Period* : Flavian.

S 98-100. ? form. Good ware and glaze. *Period* : Flavian.

S 101. Drag. 37. Good (thin) ware and glaze. Part of shrub (cf. D. 1132-6). *Period* : Flavian. On natural clay behind primary mound and probably contemporary with it.

S 102. Drag. 37. Good (thin) ware and glaze. Arcading (cf. O. and P., pl. xx, 7. Columns similar to D. 1094) : (i) mostly wanting ; (ii) Diana to r. with bird. (D. 63—MERCATOR.) *Period* : Flavian. Found in exterior footings of main wall at W. corner.

S 103-28. This group comes (with S 2-95 above) from the reddish sandy loam backing the main wall.

S 103. Drag. 37 (transitional). Good ware and glaze. Lower frieze festoon pattern (Knorr, pl. 84, G—VITALIS). *Period*: Domitian-Trajan.

S 104. Drag. 37. Good ware and glaze. Large tendril pattern (cf. O. and P., pl. xv, 2), upper space—two leaves (Knorr, pl. 23, 6—COELUS) and bird to r. (D. 1009—BANUUS, PATERNUS), lower—divided horizontally (mostly wanting). *Period*: Domitian-Trajan.

S 105. Drag. 37 (transitional?). Good ware and glaze. Panel decoration: (i) double vertical panel, upper compartment (incomplete)—hare to r. (D. 946—VALERIUS), lower (incomplete)—oblique zigzags; (ii) mostly wanting—corner tendrils. *Period*: Flavian.

S 106. Drag. 37. Good ware and glaze. Panel decoration (i) mostly wanting—part of a corner-tendril; (ii) part of animal to l. (hare or dog). *Period*: Domitian-Trajan.

S 107. Drag. 37. Fairly good ware and glaze. Fragment with traces of panel decoration and two small six-petalled rosettes. *Period*: Hadrian.

S 108-10. Drag. 37. Good ware and glaze. Fragments with indeterminate decoration. *Period*: Trajan-Hadrian.

S 111. Drag. 37. Good ware and glaze. Fragment of rim with ovolo moulding. *Period*: Domitian-Trajan.

S 112. Drag. 37. Fairly good ware and glaze. Fragment of rim with ovolo moulding. *Period*: Trajan-Hadrian.

S 113. Drag. 37 (?). Poorish ware and glaze. Fragment of rim with ovolo moulding. *Period*: Hadrian-Antonine.

S 114-15. Drag. 37. Good ware and glaze. Fragments of rims. *Period*: Trajan.

S 116-20. Drag. 37. Good ware and glaze. Fragments of rims. *Period*: Trajan-Hadrian.

S 121. Drag. 30. Good ware and glaze. Panel decoration: (i) medallion containing small cyclamen leaf (Ludowici, p. 8); above triple cable bordering panel, acanthus leaf (D. 1161—CINNAMUS). *Period*: Trajan—early Hadrian.

S 122. Drag. 30. Good ware and glaze. Panel decoration (i) medallion containing small leaf (cf. Knorr, pls. 35, 53). Probably part of same bowl as S 121. *Period*: Trajan—early Hadrian.

S 123. Drag. 30. Good ware and glaze. Panel decoration: (i) large medallion (mostly wanting) containing part of cyclamen leaf; (ii) double vertical panel, upper compartment—festoon containing animal to l. (mostly wanting), lower—wanting. *Period*: Trajan.

S 124. Drag. 30 (?). Good ware and glaze. Fragment of rim. *Period*: Trajan.

S 125-6. Drag. 30 (?). Good (thick) ware and glaze. Fragments of one (?) rim. *Period*: Hadrian.



Fig. 1. Samian pottery. (About $\frac{1}{2}$)



INCHES

Fig. 2. Stone inscribed CDRF found in debris against outer wall-face



INCHES

Fig. 3. Stamped tile found in debris in room 7 of building XXVIII s

S 127. Drag. 30. Good (thin) ware and glaze. Fragment with indeterminate decoration. *Period*: Flavian.

S 128. Drag. 30. Good (thin) ware and glaze. Fragment of rim. *Period*: Flavian.

4. POTTERS' STAMPS

On Samian Ware.

ESCVS I · M Escusus or Escusius. Drag. 33. Fairly good ware and glaze. *Period*: Trajan-Hadrian (?). See *Bulletin of the Board of Celtic Studies*, v, p. 174. In reddish sandy loam of ramp.

CINTV[Cintusmus (?). The third letter of the stamp is indistinct. Drag. 31. Good (thick) ware and glaze. *Period*: Hadrian-Antonine. In refuse-pocket behind no. 3 counterfort.

OF CAL[Calvus. Form uncertain. Good ware and glaze. *Period*: Probably late Flavian. In refuse-pocket behind no. 5 counterfort.

PAVLL[Paullus. Drag. 18/31 (?). Good ware and glaze. *Period*: Hadrian-Antonine. In refuse-pocket behind no. 5 counterfort.

5. COARSE WARES

Reference is made to the following works:

- | | |
|-------------------|--|
| Atkinson, | <i>Lowbury Hill</i> , pp. 59-70. |
| Bushe-Fox, | <i>First Report on the Excavation of the Roman Fort at Richborough, Kent</i> , pp. 22-105. |
| „ | <i>Wroxeter Reports</i> , 1912-14. |
| Curle, | <i>A Roman Frontier Post and its People (Newstead)</i> , pp. 243-71. |
| May, | <i>The Pottery found at Silchester</i> , 1916. |
| Miller, | <i>The Roman Fort at Balmildy</i> , pp. 79-94. |
| Oswald and Pryce, | <i>Terra Sigillata</i> , 1920. |
| Sumner, | <i>Excavations in New Forest Roman Pottery Sites</i> , 1927. |
| Ward, | <i>The Roman Fort of Gelligaer</i> , 1903. |
| Wheeler, | <i>Segontium and the Roman Occupation of Wales (= Y Cymmrodor, xxxiii)</i> , pp. 159-69. |
| „ | <i>The Roman Fort near Brecon (= Y Cymmrodor, xxxvii)</i> , pp. 213-29. |

C 1-9, in marl of primary bank. C 10-49, in reddish sandy loam of ramp. C 50-4, in refuse-pocket behind no. 5 counterfort. C 55-8, in filling of no. 1 bastion. C 59-63, in filling of no. 2 bastion. C 64-8, in filling of no. 3 bastion. C 69-85, in filling of no. 4 bastion.

C 1-9. This group comes from the cuttings made through the primary bank. All of the fragments, together with the associated Samian sherds (S 96-100 above), were found actually in the marl of the bank, and must therefore be regarded as contemporary with it. Unfortunately, none of the types represented is sharply datable. All occur commonly in the late first century A. D., but many also continue well into the second.

The evidence of the associated Samian, however, would seem to assign the whole group fairly definitely to the Flavian period.

FIGURE 13.

C 1. Part of base of small globular vessel of fine pinkish-buff ware.

C 2. Olla of fine light grey ware with darker coating. Rims of this type cannot be narrowly dated. They are found as late as the Antonine period, but also occur constantly in first-century layers. See C 10-28 below.

C 3. Part of a pedestal base of light grey ware with darker slip, probably of a bowl similar to C 6 below.

C 4. Base, slightly concave, of globular vessel of fine light grey ware.

C 5. Beaker of fine pinkish-buff ware with paler surface. Type uncertain.

C 6. Straight-sided bowl, probably in imitation of Samian form 30. Hard grey clay with darker slip internally and externally. Cf. *Wroxeter*, 1912, fig. 17, 11, dated late first century, but has also affinities with *ibid.*, 6, dated 80-110. The present bowl is probably not later than the earlier date.

C 7. Bowl of pink ware, with notched rouletting, probably in imitation of Samian form 33, but with affinities to form 46. The rouletted ornament seems to date the bowl in the first century A. D. See O. and P., p. 221.

C 8. Part of carinated bowl, with beaded rim, of dark grey ware with light grey surface. This type of bowl in buff and grey ware occurs commonly at Caerleon (1926-7) in deposits dating to the last quarter of the first century A. D. The type was found also in the clay of the primary bank at York, dated 71-4. See *J.R.S.*, 1925, xv, p. 185.

C 9. Mortarium of fine pinkish-buff ware. A distinctively first-century type. Cf. *Wroxeter*, 1912, fig. 19, 10-18.

C 10-49. The ramp backing the main wall was composed of a reddish sandy loam remarkably clean in character and obviously derived from somewhere outside the area of intensive occupation. Only a small amount of pottery was recovered from the numerous series of pits sunk into it along the full length of the wall, and only one coin, a 'second brass', possibly of Domitian. The present group is strictly representative of the coarse pottery found, and should be studied in conjunction with the associated Samian sherds (S 2-95 and S 103-28 above) and stamps. An analysis of the types here listed shows that none is necessarily later than the second century, while a number is definitely late first century. And this dating is consistent with the evidence of the Samian (cited above), the bulk of which belongs to the Trajan-Hadrian period, while the latest fragments are of Antonine date.

C 10-28. Ollae. C 10-14 are of grey or grey-black ware with rubbed trellis-pattern and rim and shoulder burnished. C 15-17, of black ware with wave-pattern round neck. C 18-20, of grey or black ware with rim and shoulder burnished. C 21-2, similar, but with pinkish core. C 23 is of hard light grey ware with bead rim. C 24 is of fine reddish brown ware with smooth grey surface. C 25-6, of black ware. C 27 is a poorly made vessel of hard grey ware. The type is apparently uncommon, but occurs at Hard-knot (90-120). See *Archaeologia*, lxxi, fig. 7, 81-2. C 28 is later in type than the others.

The dating of ollae is still largely conjectural. A fairly safe chronological index, however, is the relationship of the rim to the body. In the earlier vessels, down to perhaps the latter half of the second century, the body projects well beyond the rim, while in the later, beginning in the late third century, the rim overrides the body. In

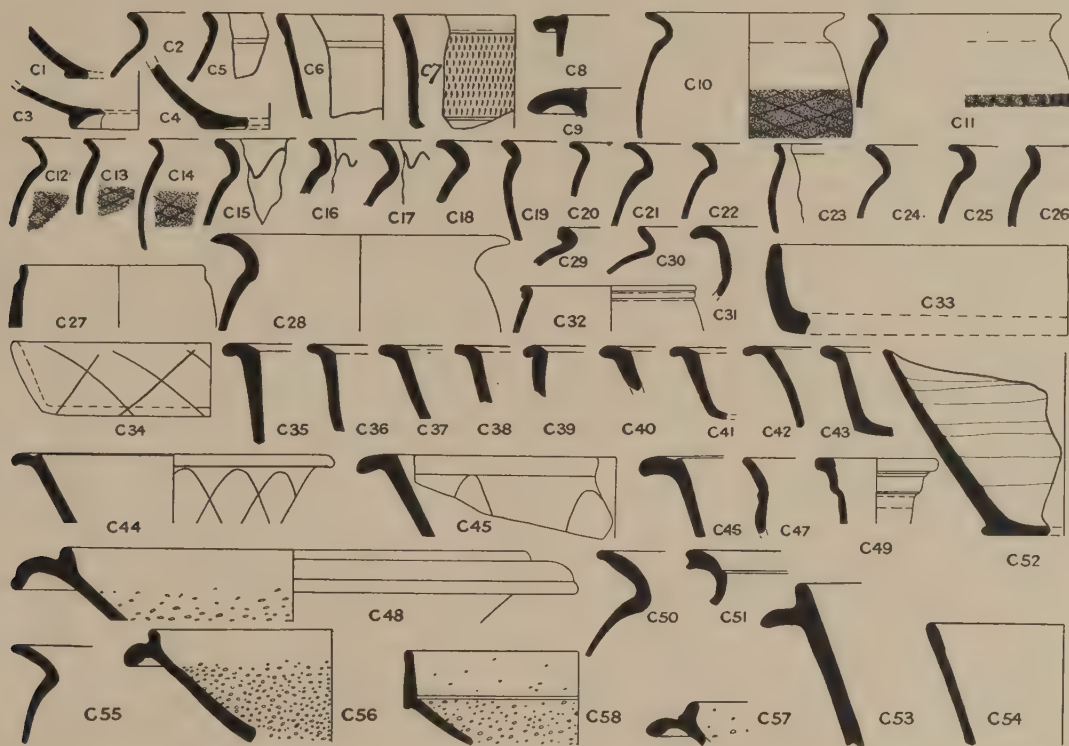


Fig. 13. Coarse pottery. ($\frac{1}{4}$)

the present instance, C 10-27 clearly belong to the earlier category. In the case of C 28, the projection of rim and body is about equal, so that the vessel may date any time between, say, A. D. 150 and 250, probably with an inclination towards the earlier date. Cf. generally *Archaeologia*, lxxi, p. 13; *Balmildy*, pp. 85-8; *Brecon*, C 43-4 and C 73.

C 29. Small globular vessel of hard grey ware, with bead rim. Cf. *Brecon*, C 52, dated 70-90.

C 30. Large globular vessel of fine well-baked grey ware. Probably of same date as last.

C 31. Part of large jar of pinkish-buff ware with grey core. Shallow cordon around shoulder. Cf. *Brecon*, C 33, dated early second century, but cited as lasting into the Antonine period.

C 32. Small pot of hard thin pinkish-buff ware with traces of darker slip, similar to *Brecon*, C 51, dated early second century.

C 33-4. Steep-sided dishes of coarse grey ware with smooth surface, both with

scribble-pattern on base and C 34 with intersecting scored lines on exterior wall. The type probably had a long life, but offers no features for precise dating. It occurs at Newstead in the Antonine period. See *Newstead*, pl. XLVIII, 41, and *Lowbury Hill*, fig. 16, 23-5.

C 35-43. Straight-sided bowls with flat everted rim (so-called 'pie-dish' shape). C 35-9, of smooth black ware with rubbed trellis-pattern around exterior wall. C 40, similar, but of grey ware. C 41-2, of smooth black ware with intersecting lines scored on exterior wall. C 43, of hard buff ware (cf. *Segontium*, 20, dated A. D. 100-25). Bowls of this type occur at Newstead (Type 49), Silchester, and Balmuildy, in every case dating from the early or middle second century. Cf. *Balmuildy*, pp. 89-90.

C 44-6. Straight-sided flanged bowls of so-called 'porringer' type. C 44-5, of grey-black ware with surface of flange and inner wall burnished and intersecting scored lines on outer wall. C 46, of light grey ware with traces of darker coating on rim and within. For a discussion of the dating of these bowls see *Silchester*, 201, and references there given. Present examples may be tentatively assigned to the first half of the second century.

C 47. Small bowl of fine soft pinkish-buff ware, with straight everted rim and cordon around neck. No exact parallel can be cited. *Richborough*, I, 60, seems comparable in shape, but is of 'hard sandy grey clay with darker surface' and apparently of late third-early fourth-century date, though possibly earlier. Present bowl can scarcely be later than the second century.

C 48. Mortarium of pinkish-buff ware. Similar to *Wroxeter*, 58, dated c. A. D. 100-50.

C 49. Part of ring-necked flagon of fine pinkish-buff ware, closely similar to *Richborough*, 4, dated early second century.

C 50-4. Refuse-pockets let into the ramp backing the main wall occurred behind nos. 3 and 5 counterforts. From that behind No. 3 two Samian stamps were recovered (p. 283, above), one perhaps of the Hadrian-Antonine potter Cintusmus on form 31, the other illegible, but probably of Trajan-Hadrian date, on form 33. The present group came from the pocket behind no. 5 counterfort. With it were associated two Samian stamps of the Flavian and Hadrian-Antonine potters Calvus and Paullus. The predominance of late types among the coarse wares shows that the pocket in this case at least cannot have been filled before the fourth century.

C 50. Large olla of coarse black ware, rim and shoulder burnished. The diameter of the rim is still less than that of the shoulder. Cf. Antonine examples from Balmuildy.

C 51. Jar of hard coarse grey ware, with grooved rim and offset around interior neck to receive lid. No precise parallel can be cited. Probably a second-century type.

C 52. Part of base of coarse heavy grey ware. Interior wall marked with the ribs of turning. Form of complete vessel uncertain, but probably similar to *Gelligaer*, Pl. II, 4 (= late first-early second century).

C 53. Flanged bowl with oblique straight side. Dark grey ware with traces of black varnish on rim. Cf. *Richborough*, I, 121-2, dated fourth century.

C 54. Cup, imitating Samian form 33. Hard greyish-brown ware with smoothed yellowish-brown surface. Cf. *Richborough*, I, 124, dated mid-fourth century.

C 55-8. This series occurred in the filling of no. 1 bastion. C 55 was found in the

layer of masons' spalls and mortar dropped during the building of the bastion. C 56-8 are from the upper layer of masonry debris that accumulated following the partial destruction of the bastion.

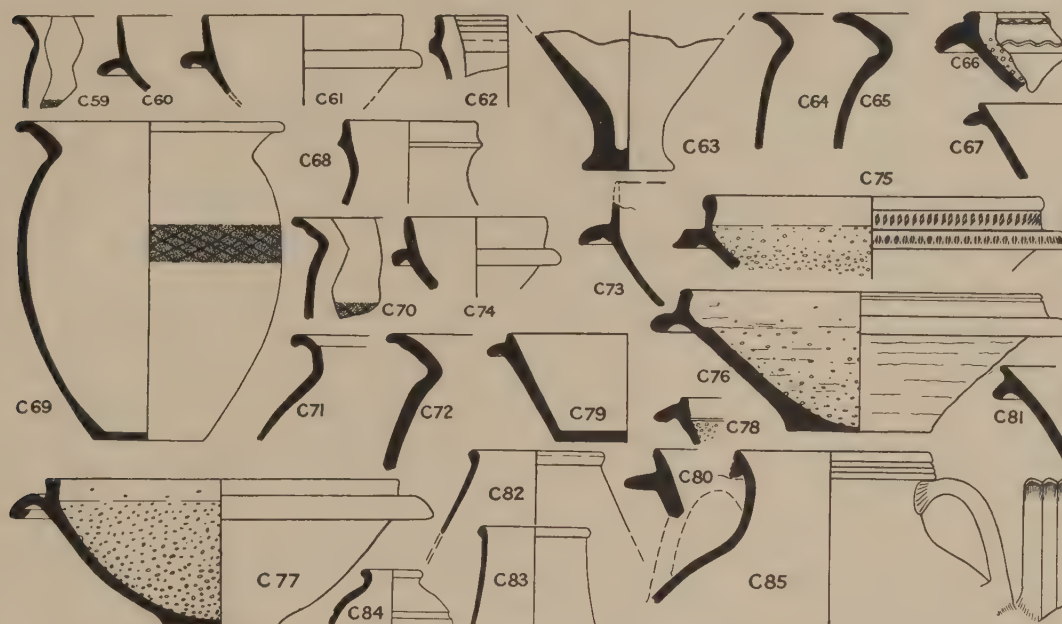


Fig. 14. Coarse pottery. ($\frac{1}{4}$)

C 55. Olla of dark grey ware with burnished rim and shoulder. Fourth-century type.

C 56-7. Flanged mortaria. C 56 is of hard white ware with pinkish core, studded on outside with particles of quartz. C 57, similar, but with clay evenly baked. Bears traces of burning. Fourth-century types. Cf. *Richborough*, I, 97-102.

C 58. Straight-sided mortarium. Hard red clay with grey core, pinkish-red slip, studded inside with quartz particles. Cf. *Richborough*, I, 107, dated mid-fourth century.

FIGURE 14.

C 59-85. These sherds came from the debris and refuse that accumulated in nos. 2, 3, and 4 bastions after their first destruction. Those obtained from no. 4 bastion were found in association with forty-four coins ranging from Victorinus (265-8) to Constantius II (337-61). This and the marked predominance of fourth-century pottery-types among the sherds are grounds for referring the whole group to the late fourth century.

C 59-63. In filling of no. 2 bastion.

C 59. Olla of grey ware with rubbed trellis-pattern. Probably fourth century.

C 60-1. Flanged bowls. C 60, of reddish-buff ware with dark red (imitation Samian) slip, closely similar to *Segontium*, 39, dated late fourth century. C 61, of red clay with grey core and traces of smooth red slip. Cf. *Richborough*, I, 109, dated mid-fourth century.

C 62. Part of flagon of hard coarse grey ware similar to C 85 below.

C 63. Base of coarse grey ware vases of similar type occurred commonly at Lowbury Hill, while two found in Reading contained hoards of fourth-century coins. See *Lowbury Hill*, fig. 18, 93-4.

C 64-8. In filling of no. 3 bastion.

C 64-5. Ollae of black ware. Third-fourth century types. Cf. C 50 above.

C 66. Flanged mortarium of coarse sandy white ware with scored wave-pattern on upper and outer edges of flange; inside, studded with particles of white spar. Fourth century. The type occurs fairly commonly in the New Forest. See Sumner, *New Forest Roman Pottery*, pl. x a, 1-6, and cf. *Wroxeter*, 1912, fig. 20, 166.

C 67. Straight-sided flanged bowl of hard grey ware; similar to C 44-6 above. Cf. *Richborough*, I, 121, dated mid-fourth century.

C 68. Neck of flagon of type similar to C 85 below. Coarse hard grey ware.

C 69-85. In filling of no. 4 bastion.

C 69-72. Ollae. C 69 and C 70 are of black ware with rubbed trellis-pattern and shoulder burnished. Fourth-century types. Cf. C 50 above. C 71 is of grey ware with reddish core and slight offset around interior rim to receive lid. Cf. *Wroxeter*, 1912, fig. 18, 32, dated A. D. 90-120. C 72 is of coarse pink ware with white slip, burnt black around upper rim. Apparently an uncommon type.

C 73-4. Flanged bowls similar to C 60 above, but C 74 of reddish-brown ware coated with yellowish-brown slip. Fourth century.

C 75-8. Flanged mortaria. C 75, of fine dull red ware with grey core and smooth red (imitation Samian) slip; inside, coarse grains of white and red spar. The neck and the upper and outer edges of the flange are ornamented with roulette pattern. Closely similar to *Segontium*, 50, dated mid-fourth century. C 76, of coarse red ware with grey core. Studded within and without with grains of quartz. Fourth century. Cf. *Richborough*, I, 99-102. C 77, of hard white ware, similar to Sumner, *New Forest Roman Pottery*, pl. x a, 9. C 78, of hard red ware coated with white slip and heavily studded within with grains of brown and white spar. Cf. *Wroxeter*, 1912, fig. 20, 166. Probably late third-early fourth century.

C 79-81. Straight-sided flanged bowls similar to C 67 above. C 79-80, of coarse black burnished ware. C 81, of hard light grey ware. All probably fourth century.

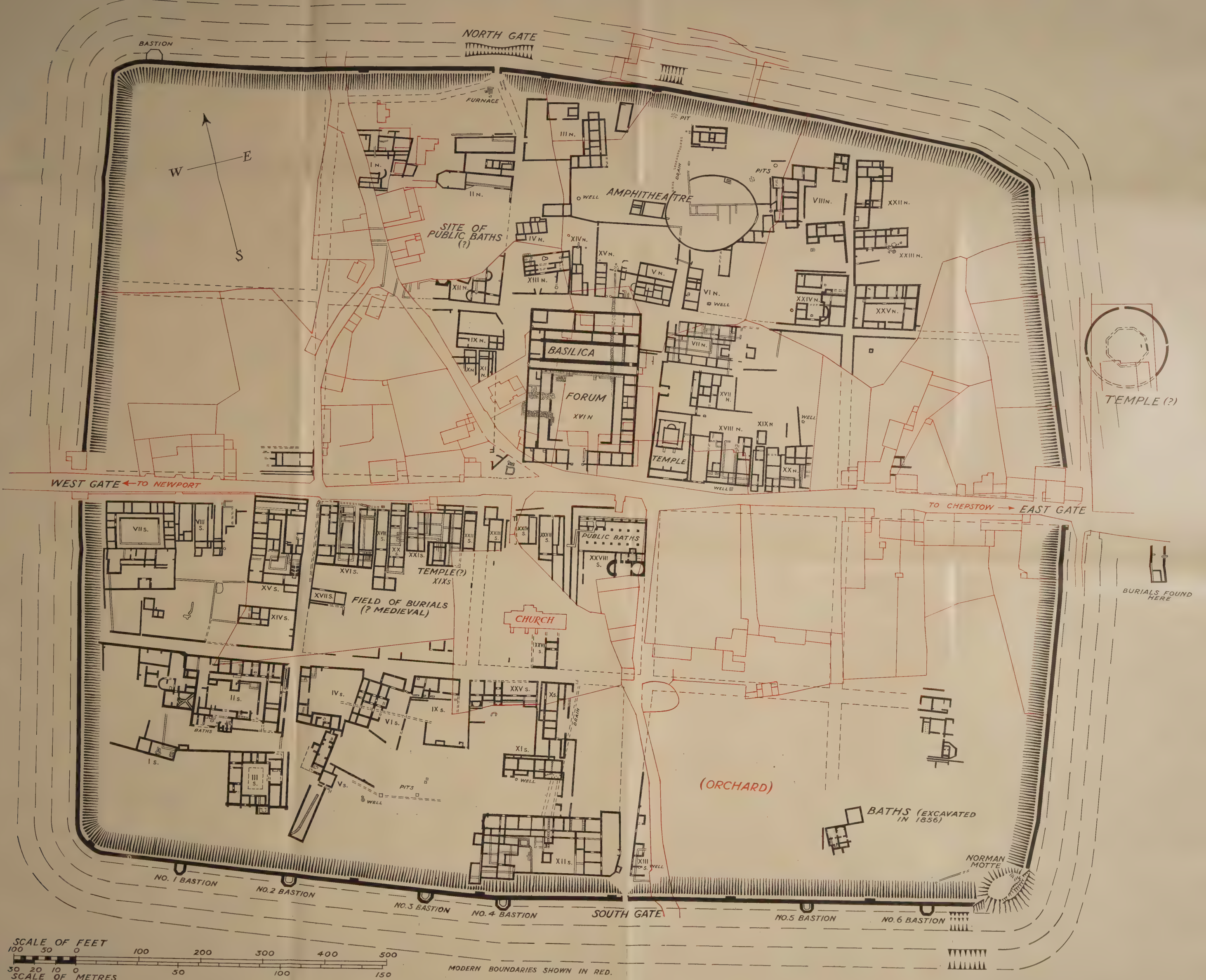
C 82. Part of conical-necked beaker of hard reddish-buff clay with smooth dark-red (imitation Samian) slip. Cf. *Richborough*, I, 120, dated mid-fourth century.

C 83. Part of conical-necked beaker of pinkish-buff ware with grey core and coated with smooth black slip. Cf. *Wroxeter*, 1914, 81, dated fourth century.

C 84. Part of small globular vase or beaker of soft red ware with traces of dark chocolate slip. No close parallel can be cited. Almost certainly fourth century.

C 85. Grey flagon, probably two-handled. This type occurs on many sites, cp. Ilkley and Templeborough, but does not seem to have been recorded from a dated deposit. Its association in the present instance suggests a date in the fourth century.

CAERWENT (VENTA SILURUM) : GENERAL PLAN OF ROMAN TOWN.



COMPLETE TO AUGUST, 1930.
V.E. NASH-WILLIAMS (FROM THE PLAN
BY FRANK KING, 1912).

INDEX TO VOLUME LXXX

A

- Abbots of Cluny, burial places of the, 177-8.
 Adams, Moses, 229.
 Aesica brooch, the, 37-42.
 Alphonso VI, king of Castile, gifts to Cluny, 155.
 Altars at Cluny, the, 147-8, 153-4.
 Amphorae, Roman, 230, 241, 247.
 Anadoli Hissar (Bosporus), 216, 225-6.
 Anglesey, Marquess, work on Bryn Celli Ddu, 182, 212.
 Animal remains, 73, 92, 95-7, 213, 231, 265, 275.
 Antler: cheek-piece, 74, 88; money-box, 89; whistle, 280.
 Apsidal building, the, at Caerwent, 235.
 Arcadius, coins of, 233, 234.
 Armets, 122, 123, 125, 126, 127, 128, 129, 133, 135.
 Armour: Gothic, 125, 126, 127, 128, 129, 130, 138;
 Italian, notes on the evolution of, with special
 reference to that in the Sanctuary of the
 Madonna delle Grazie, 120-42; Maximilian,
 123, 128, 129, 130; Milanese, 122, 125, 128, 131,
 136, 137, 138; Missaglia, 123, 125, 131, 133,
 138, 140.
 —: armets, 122, 123, 125, 126, 127, 128, 129, 133,
 135; arms, 129; bascinets, 131; bevors, 127,
 131, 133; breast-plates, 123, 124, 125, 127, 128,
 129, 130, 131, 135; burgonet, 130; cheek plates,
 122; cuisses, 125, 126, 127, 128, 129, 135;
 elbow-cops, 129, 135; gauntlets, 123, 125, 127,
 131, 135; gorget, 125, 127; greaves, 125, 126,
 127, 131, 135; helmets, 128, 129; knee-cops,
 123, 125, 126, 127, 128, 129; legs, 126, 131;
 lisières d'arrêt, 126, 127, 128, 131, 132, 133, 135;
 pauldrons, 122-3, 125, 126, 127, 128, 129, 130,
 131, 132, 135; rondel, 132; sabatons, 131, 133,
 135; sallets, 133, 137; shoes, 126; skirts, 123,
 125, 127, 129, 133, 134, 135; tassets, 123, 125,
 126, 129, 135, 136; vambraces, 131, 133; visors,
 122, 131.
 Armourers, Milanese, list of, 140-2.
 Arms (armour), 129.
 Arrowhead, flint, 90.
 Art, Romano-Celtic, in Northumbria, 37-58.
 Awl, iron, 86.
 Aylesford brooch, the, 43, 44, 46.

B

- Backworth brooches, the, 40, 41.
 Baileys, the, of Anadoli Hissar, 225; of Hieron
 Castle, 227.
 VOL. LXXX.

- Baines, Sir Frank, 251.
 Bank, the earthen, at Caerwent (Mon.), 268-9.
 Barbican, the, of Roumeli Hissar, 219.
 Bars, iron, 74, 86, 87.
 Bascinet, 131.
 Bases, Roman, 74, 77, 78, 80-1, 284, 286.
 Bastions, the, at Caerwent (Mon.), 263-8; of Hieron
 Castle (Bosporus), 227.
 Baths, Roman, at Caerwent (Mon.), 229-37.
 Bayazid I, 225.
 Baynes, Neil, on Bryn Celli Ddu, 180, 182.
 Beads: glass, 89, 230, 240, 280; stone, 208-9.
 Beakers, Roman, 284, 288.
 Beck, Horace C., 89, 213.
 Berno, abbot of Cluny, 144, 145, 146, 168.
 Bevors, 127, 131, 133.
 Birdlip brooch, the, 46.
 Bit, horse's, iron, 74, 86.
 Black tower, the, of Roumeli Hissar, 219-21, 223-5.
 Blade, iron, 85.
 Boar's tusks, 92.
 Bone: gouges, 70, 88; needle, 71, 88; pin, 280.
 Borenius, Dr. Tancred, 'The Eucharistic Reed or
 Calamus', 99-116.
 Bosporus, the castles of the, 215-28: Anadoli Hissar,
 216, 225-6; Hieron Castle, 216, 226-8;
 Roumeli Hissar, 216-23; Roumeli Kavak,
 218.
 Bosporus tower, the, of Roumeli Hissar, 221-2.
 Bowls, Roman, 78, 80, 241, 247-50, 274, 275, 276,
 284, 286-8.
 Bow-tail brooches, 39.
 Bracelet, bronze, 84.
 Breaks, the wall, at Caerwent, 253-7.
 Breast-plates, 123, 124, 125, 127, 128, 129, 130, 131,
 135.
 Brims of cauldrons, bronze, 11.
 British: coin, 74, 86, 87; currency bars, 74, 87.
 Bronze: bracelet, 84; brooches, 68, 70, 71, 72, 74,
 75, 81-4; buckets, 15-29, 34-5; button, 231;
 cauldrons, 1-33; fibulae, 239-40, 275, 276,
 278-80; handle, 84; harness-stud, 231; mis-
 cellaneous objects, 72, 73, 92; pins, 81; plate,
 73; rings, finger-, 72, 84, 230; scale from
 breast-plate, 280; slag, 92; springs, 81;
 tweezers, 74, 84; wire, 84.
 Bronze and Iron Ages, relation of the, 2-28.
 Brooches, Romano-Celtic, the typology and chrono-
 logy of, 37-58.

- Brooches: the Aylesford, 43, 44, 46; the Aesica, 37-42; the Backworth, 40, 41; the Birdlip, 46; from Kingsdown, 68, 70, 71, 72, 74, 75, 81-4.
- : bow-tail, 39; fan-tail, 39-40, 42; head-stud, 54-6, 57; S-shaped or dragonesque, 52-4; thistle, 38-40; trumpet, 37, 42-52, 57.
- Bryn Celli Ddu (Anglesey), the chambered cairn of, 179-214; early accounts, 179-82; description, 182-3; the pillar stone, 183-4; the chamber, 184; the spiral, 184-7; the inner passage, 187-8; the clay-built wall, 188-90; the portal, 190-2; preservation, 192; the outer passage, 192-3; the forecourt, 193-6; the central stone and pit, 196; the pattern stone, 197-8; the circles, 198-201; the inmost circle, 201-4; the purple clay floor, 204-5; the peristalith, 205; the outer area, 205-6; the sequence of the construction, 206-7; bulk, 207; origin of the stones, 207; fire, 207-8; objects found, 208-9; further works, 209-10; date, 210; observations, 210-11; the lesser cairn, 212; ditch, 212; the ox bones, 213; the wood, 214.
- Buckets, bronze, typology, 15-16; chronology, 16-20, 23-5; distribution, 20-3; derivation, 25-8; list, 34-5.
- Bulleid, Dr. A., 59 *n.*²
- Bullet, sling, clay, 72, 89.
- Buonsignori, Francesco, altar-piece attributed to, 139.
- Burgonet, 130.
- Burial places of the abbots of Cluny, 177-8.
- Burkitt, Miles, 190.
- Button, Roman, 231.
- Byzantine acropolis, 215.

C

- Caerwent (Mon.), excavations at, 1923-5, 229-88.
- THE BATHS OPPOSITE THE FORUM, 229-37: building XXIV s, 229-30; building XXVII s, 230-1; building XXVIII s, 231-7. THE SOUTHERN DEFENCES OF THE TOWN, 251-77: general description, 251-3; the wall, 253-7; the South Gate, 257-60; the counterforts, 260-3; the bastions, 263-8; the earthen bank, 268-9; the ditches, 269-70; method of construction, 270-4; date, 274-7.
- objects found: amphorae, 230, 241, 247; bases (pottery), 284, 286; beads, 230, 240, 280; beakers, 284, 288; bowls, 241, 247-50, 274, 275, 276, 284, 286-8; button, 231; capital, 276; coins, 231, 232, 233, 234, 238, 264, 265, 266, 267, 269, 274-8, 278; culvert, 259; cup, 286; dishes, 248-9, 276, 285-6; drains, 230, 232; fibulae, 239-40, 275, 276, 278-80; flagons, 276, 286, 287; harness-stud, 231; jars, 285-6; *mortaria*, 247, 249, 250, 274, 275, 276, 284, 286-8; *ollae*, 231, 247, 248-9, 274, 275, 276, 284-8; pedestals, 232-3, 284; pin, 280; piping, 240; pot-lid, 250; pots, 285; potters' stamps, 230, 239, 240, 241, 246-7, 276, 277, 283, 286; pottery, miscellaneous, 230, 231, 232, 240-6, 261, 265, 269, 274-7, 280-8; rings, finger-, 230; scale from breast-plate, 280; tiles, 232, 239; urn, 250; vases, 288; vessels, 231, 250, 275, 276, 277, 285; whistle, 280.
- Cairn, the chambered, of Bryn Celli Ddu, 179-214; the lesser, at Bryn Celli Ddu, 212.
- Calamus*, the Eucharistic, 99-116. See Eucharistic Reed.
- caldarium*, the, at Caerwent, 234.
- Calvus, potter's stamp of, 277, 286.
- Candlestick, the great, at Cluny, 162.
- Capital (architecture), Roman, 277.
- Caracalla, coin of, 231.
- Castiglione, Baldassare, and Camillo, tombs of, 139.
- Castles of the Bosphorus, the, 215-28.
- Cat remains, 97.
- Cauldron, bronze, from the River Cherwell, 1.
- Cauldrons, bronze, classes, 4-14; typology, 14-15; chronology, 16-20, 23-5; distribution, 20-3; derivation, 25-8; list, 30-3.
- Celtic, Romano-, art in Northumbria, 37-58.
- Chambered cairn of Bryn Celli Ddu, the, 179-214.
- Charcoal: from Bryn Celli Ddu, 187, 193, 194, 196, 197, 202, 207; from Caerwent, 231, 260, 269; from Kingsdown Camp, 97-8.
- Cheek-piece, antler, 74, 88.
- Cheek plates, 122.
- Chert: miscellaneous objects, 209; scraper, 187.
- Cherwell, River (Oxon.), bronze cauldron from the, 1-35.
- Chisel, iron, 86.
- Chronology: of bronze cauldrons and buckets, 16-20, 23-5; of Romano-Celtic brooches, 37-58.
- Church (?) at Caerwent, 235-6.
- Ciborium, the, at Cluny, 148-9.
- Cintusmus, potter's stamp of, 277, 286.
- Circles, the, at Bryn Celli Ddu, 198-204.
- Clapham, A. W., Dr. Rose Graham and, 'The Monastery of Cluny, 910-1155', 143-78.
- Clay: floor, 204-5; hearths, 70, 72, 73; pieces, distribution of, Kingsdown Camp, 90; sling-bullet, 72, 89; wall, 188-90.
- Cluny, the Monastery of, 910-1155, 147-78; the history of the churches and buildings, 143-65; the plan of the early churches, 166-78.
- , visit of William and Gundrada de Warenne to,

143-4; early history of, 144-6; dedications, 145-8, 154; the Customs, 146-7, 168-77; the altars, 147-8, 153-4; the ciborium, 148-9; the phylacteries, 149-50; other treasures, 150-1, 165; the procession on Palm Sunday, 152; the *corone*, 152; masses, 153; rebuilding of the *ecclesia major*, 154-61; the great candlestick, 162; the paintings, 162-4; manuscripts produced at, 164; the first church, 166; the second church, 166-77; the third church, 166, 168; burial places of the Abbots, 177-8.

Coins: British, 74, 86, 87; Roman, 66, 80, 86, 88, 231, 232, 233, 234, 238, 264, 265, 266, 267, 269, 274-7, 278.

Collingwood, R. G., 'Romano-Celtic Art in Northumbria', 37-58.

Collum, Miss V. C. C., 180.

Commissioners of Work, H.M., 182, 213.

Conant, Prof. Kenneth, 158, 175.

Constantine I, coin of, 269.

Constantinople, the defences of, 215.

Constantius II, coins of, 233, 265, 275.

Copper coin, 88.

Counterforts, the, at Caerwent (Mon.), 260-3.

Cops: elbow-, 129, 135; knee-, 123, 125, 126, 127, 128.

corone, the, at Cluny, 152.

Corradi, Bernardo, tomb of, 139.

Costa, the brothers, of Mantua, painting by, 139.

Cremation, 212.

Crispus, coins of, 269, 277.

Crocodiles, stuffed, in churches, 139-40.

Cores, flint, 91.

Cuisses (armour), 125, 126, 127, 128, 129, 135.

Culvert, Roman, 259.

Cup, Roman, 286.

Currency-bars, iron, 74, 87.

Customs of Cluny, the, 146-7, 168-77.

D

Dagger, iron, 66.

Dalton, O. M., 228.

Dedications at Cluny, 145-8, 154.

Defences, the, of Caerwent (Mon.), 251-77; of Constantinople, 215.

Dishes, Roman, 248-9, 276, 285-6.

Distribution of bronze cauldrons and buckets, 20-3.

Ditches, the, at Bryn Celli Ddu, 212; at Caerwent, 269-70.

Dog remains, 97.

Domitian, coins of, 66, 80, 88, 269 (?), 276 (?).

Donesmondi, on the Sanctuary of the Madonna delle Grazie, 118-21, 123, 127, 130, 139.

Dragonesque, S-shaped or, brooches, 52-4.

Drains, Roman, 230, 232.

Ducas, on Roumeli Hissar, 218, 225.

dupondii: of Domitian, 66; of Hadrian, 71, 88.

E

Earthen bank, the, at Caerwent (Mon.), 268-9.

Edwards, Mr. and Mrs. Middleton, 228.

Elbow-cops, 129, 135.

Enamelled brooches, 68, 81-2.

Escusus, potter's stamp of, 276.

Eucharistic Reed or Calamus, the, 99-116; definition, 99; terms used for, 99-100; reasons for the introduction of, 100-1; origins of, 101-3; synopsis of later documentary references to, 103-6; diffusion of, 106, 108-10; use of, 106-7; manufacture of, 110-11; surviving examples of, 111-16.

Evans, Sir Arthur, 37, 38.

Excavations: Bryn Celli Ddu (Anglesey), 179-214; Caerwent (Mon.), 229-88; Kingsdown Camp (Somerset), 59-98.

F

Fan-tail brooches, 39-40, 42.

Farfa, the Customs of, 146-7, 168-77.

Federigo II, marquis of Gonzaga, armoured figure of, 122-3.

Fibulae: La Tène, 71, 73; Roman, 239-40, 275, 276, 278-80.

Finger-rings, bronze, 72, 84.

Fire, the evidence of, at Bryn Celli Ddu, 207-8.

Fistula, the Eucharistic, 99-116. *See* Eucharistic Reed.

Flagons, Roman, 276, 286, 287.

Flakes, flint, 62, 72, 73, 75, 91, 212.

Flint: arrowhead, 90; cores, 91; flakes, 62, 72, 73, 75, 91, 212; hammer-stones, 90; knives, 70, 91, 187; miscellaneous objects, 91, 209; scrapers, 89-90, 91.

Foot-stands, Roman, 77, 78, 81.

Forecourt, the, at Bryn Celli Ddu, 193-6.

Forum, the baths opposite the, at Caerwent (Mon.), 229-37.

Fowl remains, 97.

Fox, Dr. Cyril, 251, 279.

frigidarium, the, at Caerwent, 233, 234.

G

Gallienus, coin of, 266, 275.

Gate, the South, at Caerwent (Mon.), 257-60.

Gauntlets (armour), 123, 125, 127, 131, 135.

Geology, Kingsdown Hill (Somerset), 63.

Glass beads, 89, 230, 240, 280.
 Gorget, 125, 127.
 Gothic armour, 125, 126, 127, 128, 129, 130, 138.
 Gouges, bone, 70, 88.
 Graham, Dr. Rose, and A. W. Clapham, 'The Monastery of Cluny, 910-1155', 143-78.
 Gratian, coin of, 232.
 Gray, H. St. George, 'Excavations at Kingsdown Camp, Mells, Somerset, 1927-9', 59-98.
 Grazie, Sanctuary of the Madonna delle, history, 117-20; armour in the, 120-30.
 Greaves (armour), 125, 126, 127, 131, 135.
 Greenly, Dr. Edward, 207, 208-9, 212.
 Griffith, William, 194.
 Grimes, W. F., 197, 238, 278.
 Guarnieri, Mgr., 117.

H

Hadrian, coins of, 71, 80, 95, 231.
 Halil Bey, 228.
 Halil Pasha, 218, 223.
 Hammer-stones, flint and sarsen, 90.
 Handle, bronze, 84.
 Harness-stud, Roman, 231.
 Haverfield Bequest Committee, grant towards the excavations at Caerwent, 229.
 Head-stud brooches, 54-6, 57.
 Hearths, clay, 70, 72, 73.
 Heasman, A., 251.
 Helmets (armour), 128, 129.
 Hemp, W. J., 251; 'The Chambered Cairn of Bryn Celli Ddu', 179-214.
 Henry I, gift to Cluny, 160, 165.
 Henry II, emperor of Germany, gifts to Cluny, 150-1.
 Henry of Blois, bishop of Winchester, gifts to Cluny, 165.
 Hieron Castle (Bosporus), 216, 226-8.
 Horne, Very Rev. Father E., 59 *n.*²
 Horner, Lady, 58 *n.*²
 Horse remains, 96-7.
 Horse's bit, iron, 74, 86.
 Hugh, abbot of Cluny, 153, 154, 155, 157, 158, 164.
 Hugh, archbishop of Bourges, dedication of the church of Cluny by, 145.
 Human remains, 62, 73, 74, 92, 93-4, 187, 189, 196, 212, 230, 275.
 Hyde, H. A., on the wood from Bryn Celli Ddu, 214.
 Hylton, Lord, 59 *n.*²

I

Inscriptions: at Roumeli Hissar, 223; at Hieron Castle, 228.

Iron: awl, 86; bars, 74, 86, 87; blade, 85; brooches, 81; chisel, 86; currency-bars, 74, 87; dagger, 66; fibulae, 71, 73; horse's bit, 74, 86; miscellaneous objects, 72; nails, 72, 92; ring, 71, 85; slag, 86; spud, 74, 86.
 Iron and Bronze Ages, relation of the, 2-28.
 Italian armour, notes on the evolution of, with special reference to that in the Sanctuary of the Madonna delle Grazie, 120-42.

J

Jackson, Dr. J. Wilfrid, 'Animal remains found at Kingsdown Camp', 95-7; 'The Ox Bones [from Bryn Celli Ddu]', 195, 213.
 Jacques d'Amboise, abbot of Cluny, 156.
 Jars, Roman, 385-6.
 Jasper fragments, 196, 209.
 Javelin head, 187.
 Jones, C. Bryner, 195, 213.

K

Keep, the, of Anadolli Hissar, 225, 226.
 Keith, Sir Arthur, 59 *n.*², 94, 213.
 Kennard, A. S., and B. B. Woodward, 'Report on the non-Marine Mollusca, Kingsdown Camp', 98.
 Kingsdown Camp (Somerset), excavations at, 59-98.
 ANIMAL REMAINS, 73, 92, 95-7. ANTLER OBJECTS: cheek-piece, 74, 88; money-box, 89. BONE OBJECTS: gouges, 70, 88; needle, 71, 88. BRONZE OBJECTS: bracelet, 84; brooches, 68, 70, 71, 72, 74, 75, 81-4; handle, 84; miscellaneous, 72, 73, 92; pins, 81; plate, 73; rings, finger-, 72, 84; slag, 92; springs, 81; tweezers, 74, 84; wire, 84. CHARCOALS, 97-8. CLAY OBJECTS: hearths, 70, 72, 73; miscellaneous, distribution of, 90; sling-bullet, 72, 89. COINS: British, 74, 86, 87; Roman, 66, 80, 86, 88. FLINTS: arrowhead, 90; cores, 91; flakes, 62, 72, 73, 75, 91; hammer-stones, 90; knife, 70, 91; miscellaneous, distribution of, 91; scrapers, 89-90, 91. GLASS BEAD, 89. HUMAN REMAINS, 62, 73, 74, 92, 93-4. IRON OBJECTS: awl, 86; bars, 74, 86, 87; blade, 85; brooches, 81; chisel, 86; currency-bars, 74, 87; dagger, 66; fibulae, 71, 73; horse's bit, 74, 86; miscellaneous, 72; nails, 72, 92; ring, 71, 85; slag, 86; spud, 74, 86. MOLLUSCA, 98. POTTERY: prehistoric, 62, 68, 70-2, 76, 80; Roman, 62, 65-6, 68-9, 71-8, 80-1. STONE OBJECTS: mortar, 90, 92; muller, 92; pounder, 92; querns, 71, 90; sling-stone, 92; whetstone, 70, 92.
 Knee-cops, 123, 125, 126, 127, 128, 129.
 Knives, flint, 70, 91, 187.

L

- La Tène: brooch, 71; fibula, 71.
Lead, fragments of, 89, 187; piping, 240.
Lead-piping, Roman, 240.
Leeds, E. Thurlow, 'A Bronze Cauldron from the River Cherwell, Oxfordshire, with notes on cauldrons and other bronze vessels of allied types', 1-35.
Legs (armour), 126, 131.
Lethbridge, T., 212.
lisières d'arrêt (armour), 126, 127, 128, 131, 132, 133, 135.
Lukis, Capt. F. D., on Bryn Celli Ddu, 180-2, 183, 184, 209.

M

- Maby, J. Cecil, 'Identification of Charcoals from Kingsdown Camp, Somerset (1927-9)', 97-8.
Madonna delle Grazie, Sanctuary of the, history, 117-20; armour in the, 120-30.
Majolus, abbot of Cluny, 145, 146, 149, 158, 168.
Mann, J. G., 'The Sanctuary of the Madonna delle Grazie, with notes on the evolution of Italian armour during the fifteenth century', 117-42.
Manuel Comnenus, 226-7.
Manuscripts produced at Cluny, 164.
Masses, the celebration of, at Cluny, 153.
Matilda, Empress, gifts to Cluny, 161-2.
Mattingly, Harold, 238, 278.
Maximilian armour, 123, 128, 129, 130.
Milanese armour, 122, 125, 128, 131, 136, 137, 138.
— armourers, list of, 140-2.
Missaglia armour, 123, 125, 131, 133, 138, 140.
Mitten gauntlets (armour), 123, 125, 135.
Mollusca from Kingsdown Camp, 98.
Monastery of Cluny, 910-1155, the, 143-78.
Money-box, Roman, 89.
Monroe, S., 213.
Mortar, stone, 90, 92.
Mortaria, Roman, 247, 249, 250, 274, 275, 276, 284, 286-8.
Muhammad I, 225.
Muhammad II, 217, 218.
Muller, stone, 70, 92.

N

- Nails, iron, 72, 92.
Needle, bone, 71, 88.
Newall, R. S., 195, 203, 212.
North, Dr., 189.
Northumbria, Romano-Celtic art in, 37-58.

O

- Odilo, abbot of Cluny, 146, 148, 150, 151, 153.
Odo, abbot of Cluny, 144, 145.
Ollae, Roman, 81, 231, 247, 248-9, 274, 275, 276, 284-8.
Ox remains, 97, 213.
Oxford: Ashmolean Museum, bronze cauldron in the, 1.

P

- Paintings, the, at Cluny, 162-4.
Paleologus, Andronicus, 225.
Palm Sunday, the procession on, at Cluny, 152.
Panes, Mr., 59 *n.*²
Pattern stone, the, at Bryn Celli Ddu, 197-8.
Pauldrons, 122-3, 125, 126, 127, 128, 129, 130, 131, 132, 135.
Paullus, potter's stamp of, 277, 286.
Pedestal base, Roman, 74, 80-1, 284.
Pedestals, Roman, 233.
Peers, C. R., 251.
Penannular brooches, 71, 75, 81.
Peristalith, the, at Bryn Celli Ddu, 205.
Peter the Venerable, abbot of Cluny, 159, 160, 161, 165.
Phallic stone, 202, 211.
Phillips, D. W., 202, 212.
Phylacteries, the, at Cluny, 149-50.
Pig remains, 97.
Piggott, S., 213.
Pillar stone, the, at Bryn Celli Ddu, 183-4.
Pins: bone, 280; bronze, 81.
Plate, bronze, 73.
Pons, abbot of Cluny, 158, 159, 165.
Portal, the, at Bryn Celli Ddu, 190-2.
Pot-lid, Roman, 250.
Pots, prehistoric, 79; Roman, 80, 285.
Potters' stamps, Roman, 230, 239, 240, 241, 246-7, 276, 277, 283, 286.
Pottery, miscellaneous: prehistoric, 62, 68, 70-2, 76, 80; Roman, 62, 65-6, 68-9, 71-8, 80-1, 230, 231, 232, 240-6, 261, 265, 269, 274-7, 280-8.
Pounders, stone, 92.
Prehistoric: pot, 79; pottery, miscellaneous, 62, 68, 70, 71, 72, 76, 80; urn, 62; vessel, 70, 79; wall, 188-90.
Premi, Signor, 140.
Procession on Palm Sunday, the, at Cluny, 152.
Pryce, Dr. T. Davies, 59 *n.*², 77, 80.
Purple clay floor, the, at Bryn Celli Ddu, 204-5.

Q

- Quartz objects, 209.
Querns, saddle, 71, 90.
Quietus, C. Antonius, potter's stamp of, 240, 241.

R

- Reed, the Eucharistic, 99-116; definition, 99; terms used for, 99-100; reasons for the introduction of, 100-1; origins of, 101-3; synopsis of later documentary references to, 103-6; diffusion of, 106, 108-10; use of, 106-7; manufacture of, 110-11; surviving examples, 111-16.
- Rings: cauldron, bronze, 11; finger-, bronze, 72, 84, 230; iron, 71, 85.
- Rivets of cauldrons, bronze, 11.
- Roman: amphorae, 230, 241, 247; bases (pottery), 74, 77, 78, 80-1, 284, 286; bastions, 263-8; baths, 229-37; beads, 89, 230, 240, 280; beakers, 284, 288; bowls, 78, 80, 241, 247-50, 274, 275, 276, 284, 286-8; button, 231; capital, 276; coins, 66, 86, 88, 231, 232, 233, 234, 238, 264, 265, 266, 267, 269, 274-7, 278; counterforts, 260-3; culvert, 259; cup, 286; dishes, 248-9, 276, 285-6; drains, 230, 232; fibulae, 239-40, 275, 276, 278-80; flagons, 276, 286, 287; foot-stands, 77, 78, 81; harness-stud, 231; jars, 285-6; money-box, 89; *mortaria*, 247, 249, 250, 274, 275, 276, 284, 286-8; *ollae*, 81, 231, 247, 248-9, 274, 275, 276, 284-8; pedestals, 232-3, 284; pin, 280; piping, 240; pot-lid, 250; pots, 80, 285; potters' stamps, 230, 239, 240, 241, 246-7, 276, 277, 283, 286; pottery, miscellaneous, 62, 65, 66, 68, 69, 71, 72, 73, 74, 75, 76, 77, 78, 80, 81, 230, 231, 232, 240-6, 261, 265, 269, 274-7, 280-8; rings, finger-, 230; scale from breast-plate, 280; spindlewhorls, 89; tiles, 232, 239; urn, 250; vases, 288; vessels, 78, 231, 250, 275, 276, 277, 285; walls, 64-75, 253-7; whistle, 280; wire, 84.
- Romano, Gian Cristoforo, tomb by, 139.
- Romano, Giulio, altar by, 139.
- Romano-Celtic art in Northumbria, 37-58.
- Rondel, 132.
- Roumeli Hissar (Bosporus), 216-23: purpose and history, 216-18; plan, 218-19; north tower, 219-21, 223-5; east or Bosporus tower, 221-2; south tower, 222-3.
- Roumeli Kavak (Bosporus), 218.
- Rowlands, Rev. Henry, on Bryn Celli Ddu, 179.
- Rushforth, Mr., 140.

S

- S-shaped or dragonesque brooches, 52-4.
- Sabatons, 131, 133, 135.
- Saddle querns, 71, 90.
- Sallets, 133, 137.
- Salonina, coin of, 265, 275.

- Sancho, king of Castile, gift to Cluny, 150.
- Sanctuary of the Madonna delle Grazie, the, history, 117-20; armour in, 120-30.
- Sands, Harold, 228.
- Sandys, George, on Roumeli Hissar, 224.
- Saridja Pasha, 218, 223.
- Sarsen hammer-stones, 90.
- Scale from breast-plate, Roman, 280.
- Scrapers: chert, 187; flint, 89-90, 91.
- Septimius Severus, 215.
- Sheep remains, 97.
- Shells from Bryn Celli Ddu, 209.
- Shipton-on-Cherwell (Oxon.), bronze cauldron from, 1.
- Shoes (armour), 126.
- Shrewsbury, Roger de Montgomery, earl of, benefactor of Cluny, 155.
- Simms, R. S., 202.
- Skeletons, 62, 73, 74, 92, 93-4, 230.
- Skinner, Rev. John, on Bryn Celli Ddu, 183, 190.
- Skirts (armour), 123, 125, 127, 129, 133, 134, 135.
- Skulls, 92, 94.
- Slag, bronze, 92; iron, 86.
- Sling-bullet, clay, 72, 89.
- Slingstone, 92.
- Spindlewhorls, 89.
- Spiral, the, at Bryn Celli Ddu, 184-7.
- Springs, bronze, 81.
- Spud, iron, 74, 86.
- Staghorn whistle, 280.
- Stamps, potters', Roman, 230, 239, 240, 241, 246-7, 276, 277, 283, 286.
- Stanga, Girolamo, tomb of, 139.
- Staples of cauldrons, bronze, 4-8, 9-14.
- Stone: bead, 208-9; mortar, 90, 92; muller, 92; powders, 92; querns, 71, 90; slingstone, 92; whetstone, 70, 92.
- Stones from Bryn Celli Ddu: pattern, 197-8; phallic, 202, 211; pillar, 183-4.
- Stud, harness-, Roman, 231.

T

- tabule*, the, at Cluny, 151.
- Tassets, 123, 125, 126, 129, 135, 136.
- tepidarium*, the, at Caerwent, 234.
- Tetricus I, coins of, 234, 267, 275.
- Tetricus II, coin of, 233.
- Theodosius I, coins of, 269, 277.
- Theodosius II, 216.
- Thistle-brooches, 38-40.
- Tiles, Roman, 232, 239.
- Towers of Lethe or Oblivion, the, 217.
- Toy, Sidney, 'The Castles of the Bosporus', 215-28.
- Trowbridge, A., 251.

Trumpet-brooches, 37, 42-52, 57.
 Tusks, boar's, 92.
 Tweezers, bronze, 74, 84.
 Typology: of bronze cauldrons and buckets, 14-16;
 of Romano-Celtic brooches, 37-58.

U

Urban II, Pope, consecration of altar at Cluny, 6,
 157.
 Urbs Roma, coin of, 264, 275, 276.
 Urns: prehistoric 62; Roman, 250.

V

Valens, coin of, 234.
 Vambraces, 131, 133.
 Vases, Roman, 288.
 Venetian school, painting of the, 139.
 Veronese school, painting of the, 139.
 Vespasian, coin of, 232.
 Vessels: prehistoric, 70, 79; Roman, 78, 231, 250,
 275, 276, 277, 285.
 Victorinus, coins of, 265.
 Visors, 122, 131.

W

Wallis, Dr. F. S., 63.
 Walls: prehistoric, 188-90; Roman, 64-75, 253-7.

Ward, John, on the defences of Caerwent, 251, 252,
 253, 254, 265, 272, 275.

Wards, the, of Anadolî Hissar, 225; of Hieron
 Castle, 227.

Warenne, William and Gundrada de, visit to Cluny,
 143-4.

Waugh, Sir Telford, 228.

Wheeler, Dr. R. E. M., 229, 251.

Whetstone, 70, 92.

Whistle, Roman, 280.

William, duke of Aquitaine, foundation of the
 Monastery of Cluny by, 144.

Williams, V. E. Nash-, 'Further Excavations at
 Caerwent, Monmouthshire, 1923-5', 229-88.

Williams, Rev. W. Coleman, 229.

Wire, bronze, 84.

Wood, the, from Bryn Celli Ddu, 214.

Woodward, B. B., A. S. Kennard and, 'Report on
 the non-Marine Mollusca, Kingsdown Camp',
 98.

Wratislaw, Baron Wencelas, incarceration in Roumeli
 Hissar, 223-5.

Wyndham, Henry Penruddocke, on Bryn Celli
 Ddu, 179.

Z

Zaganus, or Zoghnos, Pasha, 218, 223.

